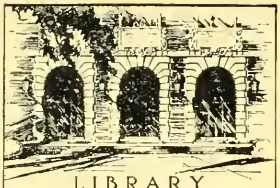

LIBRARY
OF THE
UNIVERSITY
OF ILLINOIS
591.9415
T37n
v.3
cop.2
BIOLOGY
NATURAL
HISTORY
DEC 9 - 1944

NATURAL HISTORY OF IRELAND.

Digitized by the Internet Archive
in 2011 with funding from
University of Illinois Urbana-Champaign

http://www.archive.org/details/naturalhistoryof03thom

THE

NATURAL HISTORY

OF

IRELAND.

VOL. III.

BIRDS,

COMPRISING THE ORDER

NATATORES.

BY

WM. THOMPSON, ESQ.,

President of the Natural History and Philosophical Society of Belfast, Corresponding Member of the Nat. Hist. Society of Boston, U.S.; of the Academy of Natural Sciences, Philadelphia, &c., &c.

LONDON:

REEVE AND BENHAM, HENRIETTA STREET, COVENT GARDEN.

1851.

PRINTED BY REEVE AND NICHOLS,
HEATHCOCK COURT, STRAND.

591.7415
T37n
v.3
cop.2

PREFACE.

The present volume, concluding the Birds of Ireland, contains descriptions of all the web-footed or swimming species (*Natatores*). These include the swans, geese, ducks; divers, auks, cormorants, gannets; terns, gulls, and petrels.

If a want of generalization of the facts contained in these volumes be objected to, it should be remembered, as stated in the preface to the first volume, that they are merely put forward as supplementary to several works on the Birds of England and Scotland, in all of which generalization will be found, though not invariably based on sufficient data. The author of the present volumes considered it better to content himself with publishing the facts, as a contribution of materials for that purpose, rather than attempt to generalize on insufficient grounds.

The detail he feels must often be wearisome to those not specially interested in the subject, or who do more than refer to one species at a time. It was never imagined by the author that the work would be read continuously by any individual; it was drawn up simply as one of reference, and hence pains were not taken to render the style more flowing, or to free it from the constant impediments to an even course of

perusal which, almost at every step, beset the reader's path, in the form of dates, localities, &c.

The author very much regrets that the list of Irish names of native birds is not yet ready (as he had hoped it would have been); the gentleman who has the catalogue in progress being unable to complete it in time.

This volume cannot be allowed to go forth without the remark, that so great has been the mania for collecting birds' eggs during the last few years—though not in one case out of ten, with any scientific object in view—that the author has often, in the course of preparation of the last two volumes, been obliged to pause and consider whether he should name particular breeding-haunts of those grallatorial and natatorial birds whose nests being placed upon the ground, are easily discovered, lest he should be the innocent cause of their banishment from the locality. He feels well assured that if the rage for egg-collecting continues, many a species will be driven from its present haunt.

The cruelty of shooting great numbers of marine birds in the breeding season has been mentioned in connexion with different species in this work, and it is feared will not be abated, so long as the proprietors of islets or rocky headlands permit such slaughter to be committed upon their property. Everywhere around the coast, and at inland lakes where birds are not specially protected, their rapid decrease is apparent, in consequence of wanton persecution. The birds at Lambay Island, off the Dublin coast, having decreased remarkably of late years, inquiry as to the cause was made, and the following reason, among others, communicated:—About the year 1842, an officer laid a wager that he would shoot 500 birds here in a day, and went to the island with every requisite for his murderous purpose.

Servants were constantly employed loading his guns and filling hampers with the slain; but, long ere the sun had set, his object was accomplished and his bet won. Five hundred birds at this season, be it remembered, may be reckoned equivalent to twice or thrice as many, according to the species killed, and to the number of young they would respectively have produced.

Such is an instance of what, on a smaller scale, is being commonly enacted.

BIRDS OF IRELAND.

Order NATATORES.

SWIMMING BIRDS.

BIRDS OF IRELAND.

Order NATATORES.

(*Swimming Birds.*)

THE GREAT WILD SWAN.

Hooper; Whistling Swan.

Cygnus ferus, Ray.
,, *musicus*, Bechst.
Anas cygnus, Linn.

Visits Ireland occasionally,—perhaps regularly,—in winter.

Of this species, as distinguished with certainty from *Cygnus Bewickii*, I have the following notes. In the winter of 1829–30, a couple, shot in Strangford Lough, two miles from Newtownards, were brought on sale to Belfast. An old male, shot on the coast of Wexford in 1830, and a young male, since obtained, within four miles of Waterford, were purchased by Dr. R. J. Burkitt, of that city, for his collection. Two birds, shot on the Wexford coast in March 1837, were sent to Dublin, where they came under

my notice in the hands of a taxidermist, who was preserving them for the museum of the Royal Dublin Society.

In the following year I saw, with the same person—Mr. W. S. Wall—another bird, which had been obtained, early in March 1838, in the Queen's-county. He at the same time mentioned that, in the severe weather of the winter of 1837–38, eight wild swans were seen for two days in the bay, "close to the city of Dublin." In January 1838, a flock of fourteen appeared in the neighbourhood of Ballynahinch, county Down; one of them which was wounded, lived in Montalto demesne, until the 9th of July following, when it was killed by a dog. It was sent to a taxidermist in Belfast to be preserved, and came under my notice previous to being skinned, when the following description was drawn up:—

Length 5 feet 2 inches; *bill* from point to forehead 4 inches 2 lines,—to rictus 4 inches 3 lines,—from eye to point 5 inches 3 lines. Tarsus 4 inches 9 lines; middle toe and nail 6 inches 10½ lines. Tail-feathers 20 in number. *Colour*:—feathers from lower part of neck to vent, including those under the wings, tipped with rust-colour; remainder of under surface (from throat to neck, and from vent to end of tail) white, with occasional faint indications of rust-colour. Feathers on sides and top of head, nape, and neck for some distance below the nape tipped with rust-colour, which is very intense on the forehead; remainder of upper surface white. Legs and feet greyish-black; upper mandible at base gamboge-yellow, which colour advances on its sides rather before the nostrils, remainder black; lower mandible blackish at sides and tip, yellowish horn-colour along centre,—short feathers covering the tibia tipped with rust-colour.

A letter from John Vandeleur Stewart, Esq., dated Rockhill, Letterkenny, September 21, 1840, informed me that he had procured there, in winter, about two years before that time, a specimen of *Cygnus ferus*. A description of the bird was kindly forwarded, fully proving, from anatomical as well as external characters, that it was the species named. This individual was most probably obtained in the great *Anatidæ* winter of 1837–38, when the birds of this family were remarkably plentiful on the coasts of Great Britain and temperate continental Europe. It is singular that although many more specimens of *Cyg. Bewickii* than of *C. ferus* killed in Ireland have come under my own observation and that of my correspondents, I do not possess a single

note of one being met with during that winter. I shall, therefore, introduce, under *C. ferus*, two notes of wild swans—of which the species is not known—having been seen that season.

On the 26th of January, 1838, and for some days previously, four or five of these birds frequented Conswater, Belfast Bay; and several shots were fired at them, but without effect. Mr. Gage, jun., of the island of Rathlin, off the northern coast of Antrim, considered that for twenty years, wild swans had not been so numerous there as in the winter of 1837–38. The following note, which appeared in the *Northern Whig* of Dec. 10, 1842, bears upon that season :—"For a fortnight past Lough Swilly has been visited by several flocks of wild swans. It is *four years* since these beautiful birds were seen in these waters; and this year they have appeared more numerously than they are recollected to have done on any former occasion."

In January 1841, Mr. G. C. Hyndman saw, in Coleraine, a swan of this species, which was killed with two others and twenty-two wigeon, at the same shot from a swivel-gun on Lough Foyle about the beginning of that month.

In the severe winter of 1849–50, many rare birds were obtained in Ireland; and during that season, as in the one of 1837–38, the only wild swans that came under the notice of my ornithological friends and myself were the *C. ferus*. On the 13th of February, 1850, two of these birds were killed somewhere inland (it was said in the county Longford), and sent to Dublin. One of them (reported as being probably in its second year's plumage) was procured for the University Museum, and the other (also immature) by Mr. Glennon, bird-preserver. The tail-feathers in each are twenty in number.* † About the same time, a fine adult female of this species was sent for preservation to Belfast, by Henry S. B. Bruce, Esq., of Ballyscullion House, who, on learning that the specimen would be desirable for the collection in the Belfast Museum, liberally presented it. That gentleman

* Mr. R. Ball.

† A young wild swan, but of which species could not be learned, was shot on a pond near Dingle, county Kerry, this season.

informed me that this swan was shot by his gamekeeper in the heather on the borders of Lough Beg at day-break, on the 14th of February. Hearing on the previous day that a swan was on the lake, Mr. Bruce went in pursuit, and got two or three shots at it with a rifle; but being in a boat, and a stiff breeze blowing at the time, he could not strike the bird with a ball, though he did so more than once with shot, at too great a distance, however, to do much injury. Night coming on, the chase was given up, and on the following morning the keeper was sent to where the bird was last seen, when, managing to approach within fifty yards of his victim, he shot it. This swan had been about three weeks on the lake by itself, where, during the winter at an earlier period, a single bird was seen by my informant, as well as flocks of five, six, and fourteen, at different times. Lough Beg is contiguous to Lough Neagh, with which it is connected by the river Bann.

I made the following notes on this swan previous to its being skinned. Weight 17½ lbs.

	ft.	in.	lin.
Length from point of bill to end of tail	4	8	9
—— of wing from carpus to end of longest quill	1	11	9
——— bill from first feathers on forehead to point		4	3
——————— rictus to point		3	11
——————— eye to point		4	11
——— tarsus		4	9
——— middle toe and nail		6	0
The black colour of the upper mandible extends from the point		3	2
Leaving of yellow thence to forehead		1	1
The black extends, in an angular direction, from its termination on the ridge of the bill down through the middle of the nostrils, until it strikes the base of the upper mandible at the distance from its point of		1	9

Tail-feathers 20 in number.

This bird is wholly of a white colour, excepting a very few rust-coloured feathers close to the base of the upper mandible. This is of a deep lemon-yellow towards the base, and shining black towards the point. The under mandible is black on the outer horny part, lemon-yellow down the central or fleshy portion. Legs and toes with webs of both upper and under surfaces black; nails blackish; irides blackish; —the precise shade could not be ascertained, owing to the bird having been two or three days dead. On dissection it proved to be a female; the stomach was quite empty.

Wild Swans, *Cygnus* ——— ?

The following notes relate to these birds as observed without reference to species. In "A Brife description of Ireland made in this yeere, 1589, by Robert Payne," we are told that "There be great store of wild swannes, * * * * * * much more plentiful than in England." Harris, in his History of the county of Down published in 1744, says, of *Cygnus ferus*,—"Great numbers of them breed in the islands of Strangford lake" (p. 234); and in another part of the volume, when enumerating such of the islands as are known to him by name, and reckoning fifty-four, remarks :—"Four of these islands are called *Swan Islands*, from the number of swans that frequent them" (p. 154). Smith, in his 'History of Cork' (vol. ii. p. 351), states that "wild swans are very common in the north of Ireland, but were only observed in the south parts of the kingdom in the great frost of 1739;"—what is said of the north may be copied from Harris, as Smith's work is dated 1749.

In the month of October 1824, a flock of about fifty wild swans appeared in Belfast Bay. Captain Cortland G. Macgregor Skinner, when quartered with his regiment at Athlone, about the year 1830, saw seven of these birds (which he describes as having been nearly as large as tame swans) that were killed on Lough Ree by the discharge of a double-barrelled gun. In 1839 I learned that for a number of years past a flock of eleven came to Portlough, near Bogay, county of Donegal, early in winter, and remained during the season.* The late Mr. John Nimmo, of Roundstone, county Galway, had often observed wild swans passing over that neighbourhood on wing; and about the year 1838, he saw six or seven on Maam river, at the head of Lough Corrib, to which place he was assured the species came regularly every winter until the preceding few years, when, owing to the country having become more frequented, they had been less commonly there. Wild swans appear occasionally in flocks about

* Mr. Geo. Bowen.

Bannagher and the Upper Shannon ;* they have been frequently shot near Cashel, and have appeared in severe winters on the Bog of Allen and in Bantry Bay.†

Mr. G. Jackson, gamekeeper to the Earl of Bantry, at Glengariff, Bantry Bay, wrote to me thence, in 1849, in reference to *Cygnus ferus* and *C. Bewickii*. His description of size, markings of the bill, &c., shows that both species were obtained by him. He often saw grey immature birds. His statement is as follows :—

"I never saw any Wild Swans in this part of the country; but in all the counties of Connaught they are plentiful in the winter season, generally arriving about the beginning of December and leaving at the latter end of February. They appear in flocks of from two to a dozen in number.—I do not recollect ever having seen more than twelve together. On January the 28th, 1836, I shot five out of a flock of seven with a rifle and ball at five consecutive shots, on a large sheet of water, the overflowing of the river, at a place called Bridgogue, between Frenchpark and Boyle. I was concealed behind a rick of turf on the first being shot; the others did not rise, but swam round him with outstretched necks, as if in amazement, which the survivors, gradually diminishing in number, continued to do, although shot after shot was fired at them and one killed at each discharge. They never attempted to take flight until a dog belonging to a countryman ran and took the water, when the two remaining birds rose on wing and fled. I never killed more than one at a shot, but have on different occasions, when waiting for duck, &c., at flight-time, procured two out of a flock with the double gun, right and left. When flying with the wind their velocity is astonishing. I used to pay as much attention to getting them as my time would allow, as their down was beautiful, and the females of my family made pelerines, boas, &c., of it, and the black or darker feathers of the wild goose interspersed fancifully in rings, spots, &c., alternately. These sold at a very high price, and were well worth their attention. The dressmakers, even of

* Rev. T. Knox. † Mr. R. Davis, jun.

Dublin, were completely at a loss to know where the black down and such beautiful white down could be obtained."

A flock of twenty-seven wild swans was seen some years ago on Lough Conn, county Mayo, by Mr. B. Ball, who could not prevail on any of the fowlers of the district to shoot one, on account of a local superstition. A story is told there, and currently believed among the peasantry, of something direful that happened to a man who had shot a wild swan.

We might expect these birds to be plentiful amid the wilds of Connaught ; but on some of the small inland lakes of the north-east of the island also—particularly in Down—they are frequently observed, and they remain on them for some time during the winter of several successive years. They frequent Lough Oran in that county, distant about four miles from Newry, where, in 1844, they made their first appearance on the 26th of January.* One which was wounded remained during two or three summers on the lake, but eventually recovered so as to join its companions on their northern flight. The words of 'Alastor' might have been applied to this poor bird, which,

> "With strong wings
> Scaling the upward sky, bent its bright course
> High over the immeasurable main.
> His eyes pursued its flight!—'Thou hast a home
> Beautiful bird—thou voyagest to thine home,
> Where thy sweet mate will twine her downy neck
> With thine, and welcome thy return with eyes
> Bright in the lustre of their own fond joy!'"—SHELLEY.

Lough Achery in Down—a narrow river-like lake about a mile in length—is often visited by these swans. Four of a grey colour frequented it for a considerable part of the winter of 1844–45, and until spring. They were several times fired at from the shore, but none were killed. When shot at, they merely swam farther out, and did not leave the lake. They were not pursued in boats. In the winter of 1847–48 again, wild swans were there. On Lough Clay, near Killileagh, Down, a flock of six alighted in the first week of February 1848, and one of them was killed.

* Rev. Geo. Robinson.

On the 30th of January, 1848, during which much snow fell, a flock of twelve wild swans appeared on Brackenhill mill-pond, near Dromedaragh, county Antrim, and remained there for a few days, regardless of the presence of men occupied in cutting drains around the pond. They were described as keeping "a strange hooping or whirring noise." Six of these birds were seen here again on the 16th of February. Early in this month a flock of fourteen or fifteen appeared on Lough Neagh, opposite Mr. Fforde's, at Rockland. Two small flocks, perhaps the former one divided, remained there for several days. On a large pond at Dromedaragh, a flock of about thirty alighted and remained during a day in November 1848;—their call was compared to that of "a young child crying." Remarks on the call are noticed, as, if well described, they should indicate whether the bird were *C. ferus* or *C. Bewickii*.

In the neighbouring marine loughs of Larne, Belfast, and Strangford, the following observations were made during the last three winters. In 1847, five wild swans were seen about Conswater, Belfast Bay, during a few days in the last week of January, where they associated with a pair of tame swans. On the 20th of February, a flock of twenty appeared flying above the bay in a southerly direction. Their call, on being first heard, was believed to be distant music;—as they approached it was remarked to consist of two different notes. In 1848, five wild swans appeared, on the 3rd of February,* coming from the south over Strangford Lough, on which they alighted beside some Brent geese; on taking flight again they flew northward. On the 8th of that month four were seen flying at the same place in company with five wild geese, with which they kept on wing for several miles from the time they were first perceived until they disappeared from view. They were observed for that distance owing to their flying somewhat circuitously. Wild swans, in flocks of from ten to fifty (not less than a hundred are said to have been once seen), visit Strangford Lough almost every year at the end of January or

* Numbers of wild swans were reported to have been seen about this time on the sea at Belmullet, county of Mayo.

beginning of February. On their arrival, persecution awaits them, so that it is not known how long they would remain if unmolested. About three weeks is the longest time that a flock has been observed. On the 13th or 14th of February, 1848, twenty-two birds were seen near Kirkcubbin, by my informant, some of which were grey or young birds; ten which had come under his notice there in a preceding year were all white: both of these flocks were driven away on the day of their arrival. They always alight near the shore, but have not been observed on the sea-banks either at high or low water. Odd birds have frequently been shot when separated from the flock.* In 1849, four wild swans (two white and two grey) were seen, on the 28th and 29th of January, far up Larne Lough, above Magheramorne. The weather had been mild before their appearance, and was so at the time, and afterwards.

In reference to the last-named winter (1848–49) it may be mentioned, that a gentleman staying in the county of Dublin, near Bray, at the end of November, heard, on a frosty clear moonlight night, the loud hooping cry of swans, and saw two flocks consisting altogether of seventeen birds flying very rapidly, the one closely after the other. They called so long as within hearing.† Another gentleman, while waiting, on the 11th of January, 1849, at a point near Coolmore, on the borders of Cork harbour, to get a shot at some wigeon, had his attention drawn to a flock of nine wild swans by their loud calls. These were like a repetition of the sounds *hoo, hoo,* and were continued incessantly as in the former instance. This cry resembles "hoop" so nearly, that we feel inclined to consider the birds as hoopers; but the note of *Cygnus Bewickii* is not very dissimilar, and may be compared to the sounds *hong-aw-aw,* with occasionally one or both of the last syllables omitted.

The *Cygnus ferus,* as I learned at Islay, Scotland, in January 1849, comes every winter to that island. Not more than seven have been observed in a flock by the gamekeeper at Ardimersy; out

* Mr. Francis Rankin, Kirkcubbin. † Mr. Robert Taylor (Belfast).

of which number he killed five in November 1848. He has seen them but of one size, similar to a living hooper, which he pointed out to me on a pond at Islay House. On Loch-in-daal, a flock of fifteen wild swans appeared early in the winter of 1848–49.

Very interesting descriptions of the habits of wild swans, as observed in Scotland, are given in St. John's 'Wild Sports of the Highlands' (chap. xxiv.), and his 'Tour in Sutherlandshire.' A most eloquent passage on these birds will be found in the 'Recreations of Christopher North' (vol. i. p. 73).

The distinctive characters of the wild (*C. ferus*) and tame swan (*C. olor*) are correctly pointed out by Harris, in connection with the extracts given from his work at p. 7. Among the fifty-four islands of Strangford Lough named by him, there are Big Swan Island of twenty, and Little Swan Island of five, acres; a second one bearing the latter name; and a fourth called simply Swan Island, each of which is one acre in extent. The map attached to the work is on so small a scale that these islands are not laid down in it; and within the present century they seem to have been almost forgotten, or to have been called by other names. In Williamson's large map of Down, published in 1810, there are no Swan islands, nor do any appear in the Ordnance index map of the county; but a Swan island is inserted in one of the Ordnance baronial maps, on a very large scale, as situated near the town of Strangford. There can be little doubt that the islands originally received their names from being frequented by these birds, which, in all probability, also bred there at one period. Long subsequent to the date of Harris's volume—towards the end of the last century—Low, in his 'Fauna Orcadensis,' informs us that "a few pairs build in the holms of the loch of Stennes," in Orkney.* The data, which will be found in the present volume under *C. ferus* and *C. Bewickii*, will probably tend to the conclusion that in the middle of the 19th century, as well as in 1589 (according to the extract given at p. 7), wild swans are "much more plentiful than

* Noticed in preface to vol. i. p. xvii.

in England." This might, however, naturally be expected, from the comparative scarcity of lakes throughout the latter country.

Many of the other islands of Strangford Lough were, in Harris's work, called after their productions, as certain birds, fishes, plants, &c., nearly all of which are at present to be found upon them at some season of the year. A Goose island, indeed, appears, but, like those deriving their name from the Swan, it has vanished from the later maps. Doubtless the island was named from the circumstance either of the bird breeding there or frequenting it; but, as in the other case, when the bird ceased to do so, the locality lost its distinctive appellation. In winter, wild swans (as already mentioned) and wild geese still occasionally visit Strangford Lough. There is a Swan island also in Larne Lough, county Antrim.

BEWICK'S SWAN.

Cygnus Bewickii, Yarr.
„ *Islandicus*, Brehm.

Is probably a regular winter visitant;

But cannot at present be announced with certainty as more than an occasional one, to the coast and inland waters.

I published the following matter on this species, to the note of March the 17th, 1836, inclusive, in the first volume of the 'Magazine of Zoology and Botany,' previous to which time I had recorded its occurrence in Ireland:—

"In the winter of 1829–30, a specimen of Bewick's swan, shot on Lough Neagh, was brought to Belfast market. It was purchased for the Natural History Society of that town, and set up for their museum—the sternum, trachea, &c. being carefully preserved. In February 1830, a flock containing seven of these swans alighted in a flooded meadow near Belfast, where they were shot at, and two of them so disabled by the one discharge, as to be, after some difficulty, secured. They were purchased by my friend Wm. Sinclaire, Esq.; and on their wounds being found so

trivial, as merely to incapacitate them from flight, were placed in his aquatic menagerie, where, in company with many other species of wild fowl, chiefly *Anatidæ*, they have ever since remained. On March 13, 1830, another specimen of this swan appeared in our market, and was purchased by Richard Langtry, Esq., who has it preserved in his collection.*

"On a comparison of the first-mentioned individual with the description of *Cygnus Bewickii* by Mr. Yarrell,† Mr. Selby,‡ and Sir William Jardine,§ I found the internal structure to agree; but in the external characters there was one important difference, the number of tail-feathers being twenty instead of eighteen, as specified by these distinguished ornithologists. This discrepancy induced me, in February last (1836), to examine Mr. Sinclaire's birds, which I did, with the assistance of that gentleman. These individuals differed from the descriptions above referred to:—In the number of tail-feathers, which in both birds amounted to twenty;‖ and in their irides, being blackish instead of orange-yellow; a narrow ring, however, of yellow extends round them. The feathers on the forehead and region of the eyes, though of a rust-colour when the birds were captured, are now white, which colour prevails over the entire plumage. The two preserved specimens also have this rust-colour above the head, but do not, like the immature birds described by Mr. Yarrell, exhibit the least appearance of it on 'the under surface of the belly,' this part of the plumage being white; hence we may conclude that the specimens under consideration were older than those so described by that gentleman, and that the head of the *C. Bewickii* retains the reddish plumage for a longer period than the under parts. Mr. Yarrell has correctly remarked that the plumage of this species is 'ultimately pure white;' but Sir Wm. Jardine

* The 2nd and 3rd quills in this specimen are half an inch longer than the 1st and 4th, which are of equal length.

† 'Linnæan Transactions,' vol. xvi. p. 445 et seq.

‡ 'Illustrations of British Ornithology,' temporary letter-press, p. 119.

§ Jardine and Selby's 'Illustrations of Ornithology,' part vi.

‖ In the 'Fauna Bor. Amer.' (part ii. p. 465), a specimen killed at Igloolik is described as having eighteen tail-feathers, and the irides of an orange-colour.

and Mr. Selby have assumed that the ferruginous markings on the head are permanent, as they thus describe them in the diagnostic characters of the bird :—'fronte genisque ferrugineo maculatis.' In one of the living individuals there is not even, up to the present time, the slightest appearance of a tubercle or knob at the base of the upper mandible. This swan *seems* to be a female; her neck, whether on land or water, is always borne in such a manner as to appear much shorter than that of her companion; the yellow of her bill is of a pale lemon-colour, whilst that of the other bird is orange: there are also such other differences observable as indicate the sexes of swans and geese in a living state.* In conclusion, I shall only remark that these swans were similar in length and breadth, each being 3 feet 10 inches from the point of the beak to the extremity of the tail, and 6 feet 4 inches across the wings: that the tubercle on the bill of the assumed male has not, during four years, increased in size; and that the ridge of the upper mandible in the assumed female is black from base to point, a small patch of pale yellow, irregular in outline, appearing on the sides only of that mandible about 3 lines from the base; the yellow colour is indeed differently disposed on the bills of all the four specimens.

"Every spring and autumn since Mr. Sinclaire had these swans, they have regularly, about the months of March and September, become very restless, and for the period of at least three weeks have wandered from the enclosure, within which they are contented to remain all the rest of the year. It was noted, on April the 8th, 1833, that they have been at their migratory turns for some weeks. They walk from the pond in a north-east direction, until stopped by a hedge about 250 yards distant, then wheel about and fly as well as they are able, with pinioned wings, back to the water. They continue this practice during the day, and at night they and the bernacle are heard flapping along the pond. In disposition they are timid and extremely gentle, and never

* Notwithstanding appearances, this male-like bird, which was killed by a dog about the 1st October, 1837, proved on dissection to be a female. The other bird met with its death from the same cause two years afterwards. It did not come under my examination.

attempt to molest any of the wild fowl confined in the same pond with them, though all of these are their inferiors in strength and size. Their call, chiefly uttered at the migratory periods, is a low deep-toned whistle once repeated. On the water, the carriage of the *Cygnus Bewickii* is intermediate in its character, between that of the mute swan and common goose. Their necks are not thrown boldly back, nor their wings raised above the body as in the *Cygnus olor*; but if they do not exhibit the grace and majesty of this species on the liquid element, they appear to much more advantage on land, where by choice the greater portion of their time is spent.

"The Museum of the Royal Dublin Society contains a specimen of Bewick's swan, which was shot, in November 1830, in the west of Ireland. It exhibits the rust-colour on the head, indicative of immaturity. In the collection of William Massey, Esq., of the Pigeon-house Fort, Dublin, I recognized another bird of this species in the immaculate plumage of maturity. This was, along with a second individual, killed by Mr. Massey, out of a flock of five, in Dublin Bay, on the 18th December, 1829.

"On a fine sheet of water in the demesne of the Marquis of Sligo, at Westport, county of Mayo, in June 1834, I observed a swan of this species, in mature plumage, but could not learn any particulars of its capture. On January the 4th, 1836, two 'strings'—as they are called when flying in single file—of wild swans, consisting of twenty-eight birds, were seen at the bog-meadows, near Belfast; and on the following day, Mr. Wm. Sinclaire saw a string of nineteen flying with extreme slowness from the direction of Belfast Bay to the same place. From their call being, though somewhat hoarser, like that of the individuals in his possession, and from their apparent similarity in size, he was fully satisfied that they were *Cygnus Bewickii*. In a letter dated February 5, 1836, Mr. R. Ball mentioned having recently obtained three specimens of this swan. Two of them were shot in the county Fermanagh, the third he bought in Dublin market, where another was exposed for sale at the same time. It could not be ascertained where the two latter were killed.

"March 17, 1836. I examined a *Cygnus Bewickii* which was shot at Lough Beg, adjoining Lough Neagh, on the 12th instant. Its length is 3 feet 9 in.; tail-feathers 20;* knob on bill very small; feathers on forehead deep rust-colour; on sides of head tinged with pale rust-colour at their extremities; tips of feathers on breast and entire under surface of belly of a rust colour, so extremely pale as to have the appearance merely of being soiled; bill on the ridge, as far as nostrils, pale orange: this colour advancing a little farther on the sides, thence to tip black. On dissection it was found to be a female. Its stomach was filled with minute seeds and gravel. As I have heard of flocks of wild swans being frequently seen on Lough Neagh during the last two months, there is little doubt that they have been there since first observed in January, and that they will most probably remain until the period of their vernal migration. The five remaining birds of the flock, out of which Mr. Sinclaire's specimens were obtained in 1830, went off in the direction of Lough Neagh; and a similar number, presumed to be the same individuals, were a few days afterwards seen in the flooded meadows, where they had been fired at. This is mentioned as indicative of their continuance in the same part of the country.

"Although the *Cygnus Bewickii* is considered to visit England less commonly than the *Cygnus ferus*, it is certainly of more frequent occurrence in Ireland."

The following matter has not hitherto been published:—In the spring of 1836, I saw two of these swans at Mr. W. S. Wall's (bird-preserver), Dublin, both of which were shot in the King's county. He received them in a fresh state on the 11th February, and 3rd March, of that year.

About the month of January 1837, one was purchased in Dublin market.† In the middle of that month, a specimen, sent from Coleraine to Belfast to be preserved, came under my notice.

* Since attention was called in this paper to the difference in the number of tail-feathers, it has been admitted by ornithologists that the number at first assigned to the *C. Bewickii* is not of specific value.

† Mr. H. H. Dombrain.

Its plumage was pure white everywhere except on the top of the head, where some faintly rust-coloured tips to the feathers appeared. Its total length (stuffed, and hence uncertain) was 3 feet 11½ inches; wing from carpus 20 inches; bill above, from point to forehead, 3¾ inches; bill to eye 4¼ inches; yellow colour on bill extends from the forehead to within half an inch of nostrils; tarsus 4¼ inches; middle toe and nail 4¾ inches.

When in Shanes Castle demesne with my ornithological friends, Wm. and Richard K. Sinclaire, Esqrs., on the 10th of February, 1837, three of these swans appeared on Lough Neagh, not very far from the shore, where they kept swimming so long as we could give attention to them;—for half an hour. Their size, carriage, &c., satisfied us that they were *C. Bewickii*, as in these respects they exactly corresponded with the two individuals in my friends' aquatic menagerie at the Falls: the yellow marking of their bills was quite apparent when they were viewed with the aid of a pocket telescope. They did not seem intent on any object, but kept moving over the water very leisurely, never stooping their necks for food; yet the large space traversed by them in this listless manner surprised me. They appeared of a pure white colour, from which circumstance, they, as wild creatures, looked strange and beautiful as the sun shone brightly on them.

On the 19th of January, 1839, I purchased a swan of this species, which was shot on that morning by a person awaiting the flying of wigeon, about daybreak, near Comber, and a mile distant from Strangford Lough. It was accompanied by two others; the shooter described the three as coming "whistling" over him.

Its total length was 3 feet 9½ inches; bill, from forehead to point, 3 inches 6 lines, and from rictus to point 3 inches 4 lines; wing, from carpus to end of longest quill 19 inches 9 lines (2nd quill longest, 3rd longer than 1st, which exceeds the 4th in length); tarsus 3 inches 9 lines; middle toe and nail 5 inches. The forehead is rust-coloured; the cheek slightly so; the under surface faintly tinged with the same hue, so as to appear like soiled white; 19 tail-feathers. Weight 11 lbs. It was ascertained to be a male on dissection; the stomach, in addition to sand and minute pebbles, contained a number of seeds.

Early in February 1839, a Bewick's swan was shot near Coleraine, and came under my inspection at a bird-preserver's in Belfast. It was in full white plumage, and the first adult one killed in Ireland, that I had seen. This bird was very large; the wing, from carpus to end of longest quill, was 22½ inches;

bill, from forehead to point, 3 inches 5 lines; from eye to point 4 inches 5 lines; rictus to point $3\frac{1}{2}$ inches; tarsus $3\frac{3}{4}$ inches, and in some parts of a brown, in others of a black colour; middle toe and nail $5\frac{1}{4}$ inches. A gentleman resident at Portumna, situated near the river Shannon, and Lough Derg, one of its expansions, told me, in 1839, that wild swans are often there in winter: he had observed them in the course of three successive seasons. On showing him two stuffed specimens of *C. Bewickii*, he stated with certainty, that those which had been killed were not of larger size, but that they differed in having a greyish tinge over their plumage;—consequently they were young birds. Another gentleman, once resident at Portumna, supplied me with information to the same effect, and mentioned his having seen three grey wild swans which were shot there.

In the month of October 1840, I saw, at Florence Court, county of Fermanagh, a living Bewick's swan, that had been there for about ten years, and which was wounded in the neighbourhood. This bird was at first placed with a pair of tame swans, but they would not keep company with it. That the stranger might have the advantage of some society, it was considerately placed with a flock of common geese, which welcomed it as a friend, and thenceforth they became associated together;—in the midst of a flock of these birds, this swan first attracted my attention.* The Hon. J. L. Cole informed me at that time, that previous to the four preceding winters, he had annually seen small flocks of wild swans on Lough Macnean—a fine and extensive lake within three miles of Florence Court,—and occasionally observed, at the same view, two flocks, each consisting of six or seven individuals. Arthur Young remarks, in reference to Lough Erne, in his 'Tour in Ireland,' under date of August 17, 1776:—"Large flights of swans sometimes appear here in winter."

A Bewick's swan, wounded on the Shannon, in the middle of February 1841, was procured there by Colonel Jones, of the Board of Works, and presented by him to the Royal Zoological Society of Ireland. It was received at their garden on the 18th

* About two years afterwards, it met with an accidental death.

of that month.* On the 19th of February in the same year, a fresh specimen of *C. Bewickii* was kindly sent to me from Dublin by the Earl of Enniskillen. Two of these swans, as mentioned by Dr. Burkitt, of Waterford, in November 1841, are in his collection—a young bird shot at Kilbarrey Bog, outside the liberties of Waterford,—and an old one from Clones, county of Monaghan: the years in which they were killed are not stated. On the 1st of February, 1844, a *Cygnus Bewickii* was obtained in Wexford Harbour; three or four more accompanied it.†

On the 5th February, 1845, two of these swans, which had been killed on the Shannon, were on sale in Dublin market.‡ Within the preceding few weeks, the *C. Bewickii* had been met with in the counties of Wexford and Roscommon.§ On February the 17th, 1845, five wild swans—three old and two young (the latter, grey)—were seen, for about six hours, by H. Bell, wild-fowl shooter, on Ballymacarret Bank, Belfast Bay, within half a mile of the town. He passed in his boat, with a mounted swivel-gun, at less than a hundred yards' distance, without their regarding his proximity, or leaving off their feeding for a moment. He could easily have got a shot at them, but feared they might be tame swans. They were eventually frightened away by his firing at wigeon close by, when they rose to a great height in the air, to an elevation that he imagined would carry them over the range of mountains between this locality and Lough Neagh, in the direction of which they proceeded. This fowler, as well as others, some years ago saw a flock of about eighty wild swans in Belfast Bay, where they remained some days, and were fired at, but without effect. On the 19th February, 1845, the Marquis of Downshire mentioned to me that four wild swans had, for the last three weeks, frequented one of the artificial lakes in Hillsborough Park, his seat in the county of Down.

* *December* 1849.—This bird is still living here. It was placed on a pond with a pair of Polish swans (*Cyg. immutabilis*), a male black swan, and several kinds of geese, with all of which it seems to live quietly and contentedly, though not so familiar with visitors as the others. The black swan coupled with it on two successive seasons, but there was no produce. Its voice is a single, sweet, metallic note, repeated at short intervals.‖

† Mr. Poole. ‡ Mr. R. Ball. § Mr. R. Davis.

‖ Mr. R. Ball.

December 16, 1849.—When walking along the new Antrim road, about a mile from Belfast, to-day, which was fine and mild for the season, with dark and heavy clouds impending about the mountains, I saw a flock of six wild swans for a considerable time. At first they came in view above the town reservoir, and then went in the direction of Devis mountain, beating about all the while as slowly as they could fly. The day was of such a kind that only their back and the upper surface of their wings showed white when these happened to be turned towards me; otherwise they were wholly in shade, and appeared quite dark; so much so that, at first sight, they were imagined to be wild geese. Their snowy plumage, thus occasionally seen aloft in the air, in strong contrast with the lurid masses of clouds, had a singular and even grand effect.

Since 1837, when the fact was mentioned that Bewick's swan is much more common than the hooper in Ireland, I have found it to continue so (1849). In addition to my own observation on the subject, Mr. R. Ball considers that four-fifths of the wild swans brought to Dublin market are *C. Bewickii*. A similar proportion, too, occurred in Connaught, to Mr. G. Jackson, gamekeeper, as of about forty or fifty wild swans killed there by him during several winters, all excepting five or six were of this species. It is the only swan which has been observed on the coast of Kerry, where it appears in very severe winters.*

Mr. Blackwall, in his 'Researches in Zoology' (p. 171), gives a most interesting—in part, affecting—account of the attachment of a pair of these birds.†

The Tame or Mute Swan, *Cygnus olor*, Gmelin (sp.), is not known to have occurred in a wild state in Ireland, though it is believed to have occasionally wandered to Great Britain, from its native abode in north-eastern Europe. The date of its introduction to the more western island is unknown to me. Smith, in his 'History of Cork' (1749), remarks that—"The tame swan is frequently met with near gentlemen's seats on their ponds and reservoirs."

* Mr. R. Chute, December 1849.

† It is copied into Yarrell's work.

Since childhood, this bird has been well known to me from being kept on our own and on friends' ponds; but I do not feel satisfied that anything I can say on the subject is worth relating. The period of the male becoming bold varies of course with the season. A relative notes him as being so at Wolf-hill, at the end of January in 1832, and not until the beginning of March the following year, when the entry appears—"Swan getting bold; *turned on me in the yard.*" The boldness is sometimes continued late in the season, though quite uncalled for in defence either of mate or progeny. At a very spacious sheet of water in Belvoir Park, near Belfast, whither, on the 9th October, I once went to ascertain what species of the smaller bivalve shells it produced, I was at that late period as savagely attacked by one of these birds as I could have been in the breeding season. On endeavouring, at various parts of the lake, to ply the tiny net, my enemy always boldly met me, though occasionally having to use his wings along the surface of the water. Eventually, finding that he was determined to be "sole monarch of all he surveyed," I was obliged to forego my intended pursuit, rather than incur any risk of injuring the bird in self-defence.

The boldest swan I ever saw was one kept at Wolf-hill for many years. When any person appeared within 100 or 150 yards of his pond in the breeding season, he hurried, half flying, to assail him, and as boldly attacked horses as men, rushing up and striking them about the hind legs, to the astonishment of their riders; fortunately for the swan, they always dashed forward when struck, instead, as we might expect, of trying the effect of their heels against the assailant.*

On the subject of nidification, &c., it was noted by a relative at the same place, in 1833—"Our tame swans had their nest this spring as usual beneath the hovel at the side of the dam: the male bird carried the

* The *Cygnus Bewickii*, as already mentioned in reference to the individuals which have come under my own notice, is gentle at all periods of the year. I have had no opportunity of observing, for any length of time, the habits of the great wild swan (*C. ferus*). But one of these birds, which has been kept without the company either of its own or other species, at Seaview, near Belfast, for the last few years, was remarked to call for the first time in the season, on the 26th of February, 1850, which it continued to do for some days afterwards, when I was informed of the circumstance. It likewise became so far bold as to advance to the banks of the pond and leave the water, to march confidently up to a person walking there. This bird had before, open-billed, pursued children who ventured on the banks of the pond (which is large), so that they had to be forbidden to go there.

straw and made the nest himself, then sat on it for some days before the female, as if to induce her to follow his example. After she did begin to sit, he sometimes relieved her by taking her place. When the nest was approached he came up and stood beside her. One morning that I stood by, he placed himself under her wings lest the egg might be disturbed: the wings of both birds continued trembling all the while that I remained." In the preceding year my friend remarked:—"The swan beginning to sit on two eggs on the 2nd May; the first appearance of the young on the 13th June; moulting 'of the old birds commencing early in July.'"

Late in September, I was once amused at the occupation of a pair of old swans at the Falls. They were seated in the furrow of a potato-field, busily engaged delving their bills into the sides of the ridges where potatoes were exposed to view, bringing them out and eating them.

It is a common practice for the old female swan to carry her cygnets on her back on the calmest and stillest ponds, as well as under other circumstances (see Yarrell, 'Brit. Birds'); and beautiful do the innocent, lively little creatures appear, with their fine bright eyes, when thus under the expansive snowy canopy of their parent's wings. Though not a songster, the swan has, as remarked by Yarrell, "a soft low voice, which may often be heard in spring, and when moving about with its young."

Waterton, in the second series of his 'Essays on Natural History,' gives a very pleasing description of the domestic swan, concluding with a most graphic narrative of the last illness and death of a favourite one at Walton Hall.

The Polish Swan, *Cygnus immutabilis*, Yarr., is not known to have visited Ireland in a wild state, as it has the eastern shores of England. It was first distinguished as a species there in 1838;—and has not yet been obtained in Scotland (Jard., Macg.). In August 1843, a bird-preserver in Dublin showed me a cygnet of a whitish-grey colour, which puzzled him very much. He stated that it was the produce of a pair of swans purchased by a gentleman (living in the neighbourhood of Dublin) a few years previously, in London, and whose cygnets were always "white," instead of the ordinary grey colour. It was the young of this bird. I was pleased to hear such an account of it from one to whom the species was unknown even by

name. The geographical distribution of the Polish swan is yet to be ascertained, It is, however, known to frequent the Baltic Sea.

The Swan, Guinea, or Cape Goose, *Anser cygnoides*, Linn.; *A. Guineensis*, Briss. We have, at Wolf-hill, found pairs of this *introduced* species to breed freely in a domestic state; which the gander will likewise do with the tame goose. They have generally inclined to breed early. A note before me mentions a pair of purely bred birds having a nest with five eggs beneath a laurel in the lawn, on the 18th March: the female, when seated on the nest, had the gander's company at her side. This species is truly said, by Bewick, to be more noisy than the common goose, so that "nothing can stir in the night or day without their sounding the alarm by their hoarse cacklings and shrill cries" ('Brit. Birds,' vol. ii. p. 257, edit. 1821). It is a fine spirited bird, though not, like the Canada goose, to an annoying extent. The motions of its long neck are very comical, particularly when playing the bravado, and running after a person with neck outstretched to its whole length, and carried so low as almost to touch the ground. The superior length of neck compared with that of the common goose, renders this attitude the more grotesque. On such occasions, both the gander and his flock are evidently proud of his prowess in *driving away* persons who are quietly walking off from his vicinity, and are quite regardless of his menaces.

THE CANADA GOOSE.

Cravat Goose.

Anser Canadensis. Gmel. (sp.)
Anas „ „

Has, in a very few instances, been shot on different parts of the coast;

And I am disposed to believe that in some of them the victims may have been truly wild. It seems to me as likely to visit this country occasionally as some other American birds which do so, and which, from not being kept by man in a living state, are known to be *feræ naturæ*. The fact of the Canada goose being semi-domesticated, and sometimes disposed to wander, is the only

argument against the birds which have been shot on the coast, having migrated thither.

Notes upon their occurrence are as follow :—

February 7, 1838. Four Canada geese appeared, most appropriately, on the pond in the Phœnix Park, Dublin, which may be called the aquatic menagerie of the Royal Zoological Garden. About the end of *April* the same year, one was shot at the low line of coast called the Murrough of Wicklow ; and about the same time a second was procured, in the vicinity of Rathmines, not far from Dublin. Both birds are stated to have been very wary, unlike individuals which had escaped from confinement.

In *April*, 1839, one was shot in Larne Lough, county of Antrim :—it is preserved in the Ordnance Museum.

January 27, 1840. I learned, by letter from Dr. C. Farran, that he received at this date, from Mr. John King, Bremore, Balbriggan (county Dublin), a Canada goose, which he shot, after sedulously watching the bird for two or three days. He at last got within reach of it, on a small pool of fresh water, near the shore, during a gale from the south-east. The bird was in rather poor condition, and weighed $8\frac{1}{2}$ lbs.

June 12, 1844. A pair were shot at Dundrum, on the coast of Down. The male bird weighed 13, the female $10\frac{1}{2}$, lbs. A fowler saw a pair, and perhaps the same, in Belfast bay, a few days before the birds were killed at Dundrum. The specimens were preserved for the Marquis of Downshire, and came under my inspection when in the hands of the taxidermist : the wings of both were quite perfect.

According to the Annual Report of the Dublin Natural History Society for 1848, "Mr. R. P. Williams presented to the Society a fine specimen of the Canada goose (*Anas Canadensis*), shot by Mr. R. Quin, of Firgrove, Innishannon, on the Bandon river, between that place and Kinsale, in March, 1846. It appeared in a flock with five others, after a severe snow-storm. Mr. Quin had observed a flock of the same birds in the preceding winter, but imagined that they had escaped from some neighbouring preserve."

Of the birds mentioned in the preceding instances, those which occurred in 1838 are the most likely to have been truly wild, as that winter (1837–38) was quite remarkable for the number of *Anatidæ*—swans, geese, and ducks—which, in the severe portion of it, visited Great Britain and temperate Europe. The occurrence of the species, however, on the continental coasts of Europe, is not noticed in the works of Temminck, Keyserling and Blasius, or Schlegel. Much information respecting this goose is brought forward in Yarrell's 'British Birds' (vol. iii. p. 91); since the publication of which, Mr. Waterton has, in the second series of his 'Essays on Natural History' (p. 107), given a very interesting account of it at Walton Hall. Wilson, commencing his description with, "This is the common wild goose of the United States," treats very pleasingly of the species (vol. iii. p. 74, Jardine's edit.), in which Audubon follows him, devoting seventeen pages to its habits (vol. iii. p. 1).

The Canada goose, being kept on ponds in the neighbourhood of Belfast, has, in a semi-domestic state, been long familiar to me. It is a spirited, bold species, and remarkably vigilant, more so even than the common goose. Its loud clanging note is heard at a great distance; and when given forth in the spring, *sans* intermission, often proves more deafening than agreeable to persons near to it. This is the boldest of birds in spring, next to the tame swan; and when paired, the gander will attack every living creature, not excepting man himself, that approaches the neighbourhood of his watery domain. The first bird of the species known to me was a goose, which, in the absence of a mate of her own kind, paired with a common gander, and produced numerous young. Some years afterwards a male of her own species was procured, with whom she associated; but though eggs were laid, they were not prolific, probably in consequence of her age. This male bird was one of a flock of six or seven, which visited Ballantrae, on the coast of Ayrshire, where he was captured, though having the full use of his wings. He was brought here by a friend on returning from shooting, in the autumn, and

placed in a yard in town for the night, previous to his intended removal to the country on the following morning. Not content, however, with his temporary domicile, he made his escape over the high wall of the yard into the street. Here, being unable to give a good account of himself, like many another wanderer of the night, he was apprehended by "the watch," and borne off, a second time prisoner—but, in this instance, to the police-office, where, with other vagrants, he was confined during the night. How one wishes to have heard Dogberry and Verges descant upon his case! In the morning, the owner, after some difficulty, traced the Canadian's "whereabouts," and, having duly proved his property in the same, had the prisoner liberated. He was kept for several years afterwards, and permitted to have the free use of his wings all the time; but to these he was most unwilling to resort, submitting even to be caught rather than do so. If his owner wished to see a flight, the bird had to be laid hold of, taken to a distant field, and then set down, when he would at once rise into the air and return to the pond. He was extremely bold in spring, and attacked every human being who had the temerity to come near his "beat." He once beset a poor woman unexpectedly, and, flying up, alighted between her shoulders, and flapped both sides of her head so violently with his wings, that she fell to the ground in the utmost terror, unaware of the nature of her assailant. I once suffered this bird to strike me with his wing, that I might have some idea what the blow of a swan's wing—said to be so severe—might be, but which *directly* I had no desire to feel. The blow pained me very considerably, and the front of my leg, where struck, did not lose its black and yellow complexion for about three weeks.*

The male bird of a pair kept on a pond in the Belfast Botanic Garden was, from his boldness in spring, the terror of all the youngsters that approached even the vicinity of the water.

These birds, like many other species, can foretell the coming

* The late Dr. Ferrar stated to a friend, that when resident-surgeon in one of the Dublin hospitals, a man who had his leg splintered by the blow of a swan's wing, was brought to him for treatment. Some of the small pieces of bone came away, and the sufferer was permanently lamed.

snow, when the "lords of the creation" do not anticipate it. This is indicated by their exceeding restlessness, and by flapping with their wings along the surface of the water. Their doing so in one instance particularly noted (in January, 1837), together with the tameness of the robins, led me, from having before observed such indications, to predict the approaching change; and next morning the ground was covered deeply with snow.

THE GREY LAG GOOSE.

Anser ferus, Gessner.
„ *cinereus*, Meyer and Wolf.
Anas anser, Linn.

Is of occasional, but rare occurrence in winter.

To the fifth volume of the 'Annals of Natural History' I contributed the following notice of the species:—"In the collection of R. Ball, Esq. there is a specimen of this goose purchased by him in Dublin market early in the winter of 1837, and stated to have been shot in this country with two others exposed for sale at the same time. Judging from its small size, the specimen is a female: it displays the blackish markings disposed irregularly over the lower part of the breast and the belly, considered by Temminck indicative of very old individuals of both sexes (Man. d'Orn. l'Eur. t. 2. p. 819) and which have generally been unnoticed in the descriptions of the species. This is the first Irish specimen of the true Wild Goose or Grey Lag that I have seen, the Bean Goose being in this country, as in England and Scotland, the common species, and, with the White-fronted, on sale in our markets every winter."

I have subsequently seen a few other Grey Lag Geese which were brought from the interior of the country to Dublin market. One was obtained in the winter of 1847, and three were there in December, 1848.* On the 23rd of October, 1849, a fresh bird offered for sale to the University Museum by a dealer in wild fowl, who knows the species as distinct from the bean and white-

* Mr. R. J. Montgomery.

fronted geese, was bought for the collection. Happening to be there myself on the 20th of November and 5th of December, others were brought, which I purchased. My two birds were said to have been killed in Westmeath, and the other in the west of King's County. The three specimens exhibited black transverse markings from the breast to the vent; an appearance caused by single blackish feathers appearing irregularly, and exhibiting their dark tips among the others. One only of them has the nail on the bill all white; a second has the upper third, and the other the lower third, of that hue; the remainder, in both birds, being pale reddish horn-colour. In the plumage at the middle of each side and at the top of the upper mandible in one bird, a speck of white appears, and is faintly indicated in the other two specimens. The stomach of the last obtained was filled, according to the preserver, with tender grass or blades of young wheat. We ate this bird and found it good in quality; the flesh was very dark-coloured. A few more of these geese were brought on sale to Dublin about the middle of February, 1850.*

Mr. G. Jackson (game-keeper) has met with the grey lag goose—which he distinguishes accurately from the bean and white-fronted—in various parts of Connaught. He remarks, "They never mingle with the others, nor do I recollect ever seeing more than seven or eight in a flock, and oftener three or four. They frequent the upland pastures and cultivated lands more than the other species. They were rather scarce, but a few, at least, were to be found every winter. From their being larger and considered a better goose, there was more attention paid to them by the fowlers. I have shot many of them. In the winter of 1834 I killed a grey lag goose with a piece of linen cloth sewed round one leg; it did not appear to be the manufacture of this country."

The grey lag goose is unknown to my correspondents in the south, and has never come under the notice of ornithologists in the north of Ireland. The central parts of the island as to latitude would therefore seem to be those visited by it.

* Mr. R. Ball.

"Mr. Donovan had, about the year 1811, near the Cove of Cork, a large flock of wild geese (*A. ferus*?) which he allowed to fly about his place, where they bred. They came to his whistle regularly. The young birds were sometimes killed for the table, and were considered by him much better than tame geese." *

The only positive notice of wild geese breeding in this island that I have met with, is that of Rutty, whose words are—"There are two sorts [of "wild goose, *Anser ferus*"], the one a bird of passage, that comes about Michaelmas, and goes off about March; but there is a larger kind, which stays and breeds here, particularly in the Bog of Allen." Harris, in his 'History of the County of Down' (1744), remarks:—"In a red bog in the Ardes, near Kirkiston * * * is also [*i. e.*, in addition to the "land barnacle"] found the great harrow goose." Smith, in his 'History of Waterford' (completed in 1745), simply enumerates the "wild goose, *Anser sylvestris*," among the birds of the county; and, in his 'History of Cork' (completed in 1749), says:—"The wild goose (*Anser ferus*) is common in winter, and frequents the more uncultivated parts of this county." The "larger kind," named by Rutty as breeding, implies at least that the white-fronted, from its being considerably smaller than the bean and grey lag species, is not meant. At that period, the latter is stated to have bred plentifully in the fens of England, though of late years they, as well as the bogs of Ireland, have been deserted by it. Although Harris says nothing of what he calls the "great harrow goose" breeding at the locality he names, an octogenarian friend informs me that a relative often told him of his having robbed the nests of wild geese at Kirkiston *flow*—"red bog" of Harris—near Kirkcubbin: the period at which he did so was previous to the year 1775.

Mr. Yarrell observes that "now whole winters pass away without a single example [of the grey lag goose] appearing in the London market" (vol. iii. p. 56). Sir Wm. Jardine and Mr. Macgillivray are silent on the subject of its occurrence at any period of time or season of the year in Scotland, consequently it was not met with during the breeding season in Sutherland,

* Mr. R. Ball.

when the former gentleman and Mr. Selby visited that county and ascertained that the bean goose breeds at several of the lakes. But Mr. St. John, in his Tour in the same county, at a subsequent period, assures us that the grey lag goose breeds at Lochs Maddie, Laighal, Urigil, &c., and arrives a month earlier for that purpose than the bean goose. He states that, to make sure of the species, he shot some of the old birds (vol. i. pp. 35, 139, &c.).

The grey lag has generally, until of late years, been considered the original of the domestic goose, but this is now doubted by some authors. On comparing wild and domestic birds, I have been unable to perceive any difference worthy of note, except the superior size of the latter, and this may, I conceive, be fairly attributable to domestication. The form of their bills is similar, and differs from that of the bean and white-fronted species. There is considerable variety, however, in domestic geese, not only as to size, but colour of the bill, legs, &c.*

Although numerous instances of the affection of the tame goose have been recorded—in Daniel's 'Rural Sports,' Stanley's 'Familiar History of Birds,' &c.—one or two more may be added. In November 1841, a lady of my acquaintance mentioned the following circumstance which had just been witnessed by herself. In the summer of 1840, a goose was brought up at the same time with a couple of ducks at a house situated very near the sea, in the vicinity of Port Ballantrae. The goose and ducks associated together, and, on the latter being killed for the table, the goose made known its affliction by going about screeching most violently for some days, and visiting every spot that it had been in the habit of frequenting with them;—it wholly refused food the first day after their death.

Mr. G. C. Hyndman has often heard his father mention a gander which he saw at Belmont, county of Tyrone, that formed an attachment to an old blind mare, a favourite charger, retired like her master from the wars. Every morning the mare was let out of the stable to take a drink, and the gander preceded her

* See note on the *Grey Lag*, at the conclusion of the *White-fronted Goose*, p. 44.

to the water, turning round from time to time, and cackling so as to guide her aright. After this the two proceeded to the hall-door, where a feed of oats was given to them, the mare and gander eating together out of the same vessel. The mare was commonly ridden into the neighbouring post-town for letters, and the first indication of her return was announced by the gander, who knew the sound of her feet long before she came in sight. The gander's feet were severely injured by the mare having accidentally trodden on them.

Towards a wounded comrade that has been lamed by being cruelly struck with a stone, or otherwise, the reverse of affection is, however, generally shown by the tame goose. Even after the sufferer is driven from the flock and severely worried for presuming to join its stronger brethren, I have remarked one after another of the main body pursue the unfortunate individual for the purpose of driving it still further from their vicinity.

On the acute hearing of geese much has been written since the time they saved the Roman Capitol! but, in another sense, that of vision, they are perhaps as acute. I have been often struck with their keenness of sight, as evinced by sudden and loud cacklings the moment any objects they were unaccustomed to would come in view, as, for instance, one day at Wolf-hill, when a small flock of curlews flying very high and quite silently over the pond on which were four geese, these birds, from the first moment of the curlews' appearance, became most vociferous, so as to attract my attention to the cause.

This note appears in the journal of the late John Templeton, Esq.—"December 13, 1806. I was greatly entertained with observing a gander searching for and raising carrots. With considerable exertion he removed the earth around the root with his bill, which, on becoming clotted with earth, he shook until cleared; and when he had bared the root sufficiently to get a firm hold with his bill, he then, sometimes with considerable exertions, pulled it entirely out."

The value of the tame goose, as estimated by Montagu in the Supplement to his Ornithological Dictionary, is extraordinary.

THE BEAN GOOSE.

Anser segetum, Gmel. (sp.)
Anas „ „

Is a regular winter visitant.

This is *the* wild goose, and the bird to whose English name *Anser ferus* is often affixed, although this term applies to an entirely different species;—to the true grey lag.

The bean goose remains during the winter in suitable localities throughout the island. About Belfast, with its highly cultivated neighbourhood, little is known of it, except as a passing visitant.

On the 12th of March, 1846, a flock of ten (their species ascertained by means of a telescope) was seen by an ornithological friend on the north-west side of Devis mountain, behind the town. They were sprung several times, at the height of from 800 to 1,000 feet, and an unsuccessful shot was fired at them; but instead of leaving the mountain, they merely alighted again at an elevated marshy part of it. They were said to have frequented the place during the winter. At the bog-meadows, within two miles of Belfast, flocks of bean geese occasionally alight, and remain for some days; but persecution soon drives them away. A couple, shot there from a flock of twelve birds, so late as the 18th of March (1841), were brought to me.

A relative noted (Dec. 2, 1832) that he saw, through his telescope, a flock of fifteen wild geese feeding in the bog-meadows, apparently on grass. During an hour that he and a companion observed them, they all continued feeding but one, which, acting as sentinel, would look around for a little time, and, if no cause for alarm appeared, would begin to feed. Another bird then played a similar part, so that one of the flock always kept on the watch.

At the King's Moss, a few miles distant from the town just named, a flock of six bean geese was met with by snipe-shooters, on the 4th of Dec., 1849, and one of them killed with snipe-shot

from a distance of about twenty yards. This bird had more white round the base of the bill than I had before seen in the bean goose. Its stomach was wholly filled with stems and leaves of the shamrock trefoil.

Wild geese, probably of this species, sometimes appear on wing near Belfast early in the autumn. On the 20th August, 1836, I observed six, perhaps one family, fly over Wolf-hill, apparently on migration.

On the 22nd of August, 1849, a fine day, (the weather mild for some time past,) I saw a flock of thirty wild geese fly low and in silence over the road near Holywood House entrance. They were proceeding in a south-east course. Though I observed them on wing for nearly a mile, I did not hear a call.

Early in the last week of September, 1838, a small flock was seen over Ballymacarret, flying low, and proceeding in a southerly direction. On September 15, 1840, the first wild geese of the season—a flock of thirty—were noticed; and on the 30th of that month about a hundred appeared. On the 12th September, 1841, five were remarked flying south-westerly, and in the middle of November two or three flocks were similarly observed. On the 8th of September, 1843, I saw, near Templepatrick, a flock of twenty-five wild geese, flying in a south-east course. The day was very fine and warm, such as the weather had been for the preceding ten days. In 1845, a flock of sixteen birds was observed, on the 12th of September, flying over Belfast Bay; and during the following six weeks great numbers appeared; many flocks occasionally on one day. Some of them alighted, though very seldom, to rest on Ballymacarret bank at low water, but they never remained so long as an hour. Throughout every month until January inclusive, and when there is no severe weather here, wild geese are occasionally seen passing in a southerly direction: in the last week but one of December, 1837, several flocks, each of about twenty birds, appeared over the bay, the weather during the week being extremely wet. The wedge-shaped form in which wild geese fly has often been commented on; but I have generally seen them fly in "strings," or single lines. Many species

of grallatorial, as well as natatorial birds, occasionally fly in wedge-shaped flocks, one side of which is, however, usually longer than the other.

The birds seen early, flying southwards, have been rarely known to alight in the neighbourhood of Belfast Bay or Strangford Lough, as those coming later occasionally do. This is an illustration of what has always seemed to me the general law with regard to birds breeding in high latitudes and moving southward for the winter, namely, that those which appear earliest proceed farthest to the south; and those which arrive latest, if belonging to species that remain at all, are the individuals which continue with us during the winter.

From November until March the bean goose, of all ages, is occasionally brought to Belfast market.

On the 12th of February, 1838, the finest specimen that I had seen came under my inspection at a bird-preserver's. Its weight was 8 lbs. 10 oz. The measurements, taken before it was skinned, were:—Entire length, 33 inches; wing, from carpus to end of quills, 19¼ in.: tarsus, 3¼ in.; bill, from centre of forehead to point, 2 in. 5 lines; from rictus to point, 2½ inches. Upper part of nail of the bill white; a central stripe, of the same colour, on the nail of the lower mandible; on part of the nails of the middle toes a whitish tinge; nails of outer and inner toes of both feet white and pale horn-colour; bill and toe-nails otherwise coloured as usual.* Plumage at base of forehead, for an inch in length, and a quarter of an inch in breadth, white, a little of which colour also appears on each side, from the middle portion of the upper mandible: this white at the base and sides of the bill, according to Temminck, marks the young birds. Wings pass the tail about half an inch. Mr. Jenyns observes (p. 223), that when the nail of the bill is white, &c., it is extremely difficult to distinguish *A. segetum* from *A. ferus*; but his own good description, notwithstanding, instantly proved this to be the former species, by the colour of the bill generally, orange legs, and wings passing the tail. With respect to the bean geese, of which the bills are figured by Sir Wm. Jardine (Brit. Birds, vol. iv. p. 66), all the birds which have come under my examination in Belfast and Dublin agreed, in the form and size of bill, with his No. 2, as in plumage, four of the specimens looked to critically, also did, except in the trivial difference that the greater coverts of the wing were greyish-brown of a more uniform tint throughout, than the other feathers of the upper surface of the wing.

* I have observed that the ordinary colour of the nail at the extremity of the bill, and of the toe-nails, of *A. segetum*, is black, while that of *A. albifrons* is white; but these colours are not always constant to either species. Of this fact Montagu shows us that he was aware at the time of writing the Appendix to his Supplement of the Ornithological Dictionary.

Wild geese are not seen about Belfast flying northward towards their breeding haunts in spring, as they are southward, in autumn and winter, toward their quarters for the latter season. Their line of flight, like that of most other migratory birds appearing in the north of Ireland, is quite different according as they proceed north or south.

The bean goose frequents annually, in winter, the bogs about Dromedaragh and Clough, county of Antrim, from ten to twenty birds usually keeping together in flocks. Their appearing much on wing is considered to foretell an approaching storm long before it is denoted by any other means. Over the wilder and more humid parts of the northern counties generally, the species is found during winter.

From an old man, one of the aborigines of the wild mountainous district of Monterlony, county of Tyrone, I have heard of various sporting and poaching exploits of the peasantry there, one of which was the practice of going out to the bogs in foggy, or, still better, snowy winter nights, to catch wild geese. The parties carried with them blazing torches of bog-fir, and the geese, attracted by the light, flew directly to it and were captured.

A few years previous to 1842 (when the fact was communicated to me), a flock of from two to three dozen wild geese, believed to be of this species, on a snowy winter evening, about seven o'clock, flew towards a gas-lamp in Cecil-street, Limerick, around which a few of them were knocked down and captured.* In foggy nights I have heard godwits and other grallatorial birds flying through the glare of gas-light above Belfast for hours, apparently not knowing whither to go, and uttering their loudest cries all the time.

It is well known that migratory and other birds often fly towards the lanterns of lighthouses, and are killed by striking against them. A newspaper paragraph, headed, *Birds taken at a lighthouse in hazy weather*, informs us that—"It is very common for birds to flock about sea-lights at night, in certain states of the weather; but we have not met with an occurrence to the same extent as the following:—The Pentland Skerries lighthouse (Orkney

* Mr. R. Davis, jun.

Island) return for October states, that on the night of the 11th they had light airs of wind with hazy weather, when nine dozen of larks, snipes, and woodcocks were caught fluttering about the lantern; and had more assistance been at hand, double that number might have been secured."*

The following note of the species of birds which had been killed at various times by flying against the lighthouse on Tory Island (off the northern coast of Donegal) and preserved by Mrs. Bailey there, was kindly communicated by Mr. G. C. Hyndman, who saw the specimens in August 1845:—Fieldfare, redwing, house-marten (killed in Dec. 1844), dunlin? ringed plover, oyster-catcher, woodcock, landrail, wigeon, puffin, and stormy petrel. The wigeon struck the copper dome above the light with such force that the sound was mistaken for that of a cannon, as a signal of distress, and the lighthouse-keeper actually sallied out to ascertain the state of the case. The wigeon, of course, was killed. Tennyson, in his last poem, "The Princess," describes the heroine, on one occasion, as

> "Fixt like a beacon-tower, above the waves
> Of tempest, when the crimson rolling eye
> Glares ruin, and the wild sea-birds on the light
> Dash themselves dead."—(p. 89, first edit.)

A friend, when woodcock-shooting for two days in December, 1819, at Mountainstown demesne, near Navan, county Meath, saw wild geese, in flocks of from ten to twenty, during the time; occasionally they came very near, though keeping out of range of gun-shot: the firing at the woodcocks roused these geese from the neighbouring bogs, which they frequent throughout the winter.

Mr. G. Jackson (gamekeeper) informs me that "WILD GEESE are very plentiful in all the counties of Connaught, where they generally appear at the full of the moon after the middle of October, and leave at the full of the moon in April. When departing they generally take their flight in the after part of the day, and bend their course towards the nearest point of sea-coast,

* Belfast Comm. Chronicle, Dec. 16, 1839.

although that should be sometimes in a west or south-west direction. They are very numerous on the extensive flat bogs and swamps of those counties. The most plentiful are the bean goose, called erroneously by the country people the barnacle goose. I have shot hundreds of them. The duck and teal were so plentiful there that the gentry never made use of other waterfowl, so geese, wigeon, &c., used to fall to my own share, and no inconsiderable quantity of them."

I have seen various specimens of the bean goose which had been purchased in the market of Dublin, where neither it nor any species of wild goose is in esteem for the table. At Waterford it has been obtained;* about Youghal was considered rare, but is noted in the 'Fauna of Cork' as occasionally plentiful in some parts of that county. It visits the bogs in the northern parts of Kerry every winter in large numbers.† Many persons, who have attended to native birds in Ireland, know little more of wild geese than by seeing them pass on wing; and consequently are ignorant of the species;—this applies, among other places, to Roundstone, on the coast of Connemara, which is named on account of its western position.‡ They are met with in great numbers on the Bog of Allen during the winter months, and small flocks are very often seen flying over the town of Clonmel, on the mountains near to which they are met with occasionally, but, being extremely wary, are seldom shot.§

The Rev. G. M. Black remarks:—"Although wild geese appear to be slow on the wing, they can, when pressed, make good way. I saw a large flock pursued by an adult sea-eagle, *A. albicilla* (the white tail being distinctly visible), near Clough, county of Antrim, in the winter of 1832, but this bird did not, within my sight, overtake or appear to gain much on them. They were heading towards a lough at a short distance."

Mr. Yarrell, after mentioning that a gander of the grey lag at

* Dr. R. J. Burkitt. † Mr. R. Chute.

‡ The grey lag and bean geese are not found in North America, but the white-fronted goose is.

§ Mr. R. Davis, jun.

the Zoological Gardens, London, would not associate with a bean or a white-fronted goose, but did so immediately with a tame goose placed there, considers this an indication of the pair both belonging to the same original stock. Although disposed to believe that our domestic goose is descended from the grey lag, I do not attach much weight to the circumstance alluded to by Mr. Yarrell, as geese of different species kept on ponds will often pair together. At Springmount, near Clough, a male bean goose, slightly wounded in the wing, was placed with a flock of common geese, from among whom he at once selected a partner, and thenceforth paid no attention to any others of her sex. He was evidently most unhappy when separated from her, even in winter, and on one occasion was the means of saving her life. The cook, being ordered to kill one of the geese, laid hold of the first that came to hand, which happened to be the wild gander's partner, when so remarkably vehement were his cries, that even the uplifted hand of the murderess was stayed, and some members of the family, with others of the household, hurrying to the scene of uproar, the cause of the bird's anxiety was discovered, and the intended victim set at liberty. This was told to me in January 1838, and no further attempts have since been made on the fair one's life. In November 1848, they were removed to a new residence, where they continue apparently as happy as geese can be. For several successive years after this pair became associated, the goose laid a full complement of eggs, and sat on them even beyond the usual time, the gander keeping company at her side during the interesting period, but, unfortunately, no issue appeared. On a subsequent year, the goose sat closely on an empty nest in the bog, her partner never leaving the immediate vicinity and guarding her most courageously. To test his courage, a person once lifted the goose off the nest, and threw her into the water, when her brave and faithful partner instantly advanced, making a loud hissing noise, and, flying at the offender, struck him with his feet and wings with all his might. During the last summer (1849) the goose laid a few eggs, but was too much disturbed by dogs to incubate them long. To the calls of his wild brethren passing over head

the gander habitually replied, and, in one instance, it was feared he had bade adieu to the place, as he took wing and joined a flock high in the air; but, after holding a little converse with them, he returned like a true lover to his mate. This gander, perhaps in right of a higher descent than his associates who merely "walk the earth," at once, when put with the common geese, took the lead of the herd, sometimes numbering fifty or more, always heading them and keeping about two yards in advance. None of the tame ganders had ever the bad taste to dispute the chieftainship with him, and he proved a trustworthy guardian, as when his associates made an occasional sally into a corn-field he took his station on the fence, and sounded an alarm when the enemy was seen approaching.

At Springmount, in fine open weather, a wild bean goose alighted beside a flock of tame geese, so close to the dwelling-house that it was shot from the back-door. A bird of this species wounded there soon recovered the use of its wings, and would fly away and remain absent for a few days, but always returned, until eventually killed on one of these experimental trips. It was there for part of a season with the hero of the preceding narrative. "In the spring of 1838 a wild goose, which had evidently been wounded, remained after the others had departed, and was seen feeding on the marshy lands of Bella, the residence of the late Edward French, Esq., near Frenchpark, and frequently joining company with some tame geese belonging to a tenant of that gentleman. After some time it walked into the farm-yard with its newly-formed acquaintance, and became quite domesticated." * A wild goose caught during a heavy fall of snow at Mourne (Down), in the winter of 1845, associated freely with a farmer's geese during the following spring and summer. In the succeeding spring, however, its wing, which had been clipped, recovered from the mutilation, and the bird, taking to flight, was heard of no more until the following autumn, when it (or a goose believed to be the same) paid a passing visit to its former associates by

* Mr. G. Jackson.

alighting for a few minutes among them, after which it flew onward and was seen no more.*

I have known a wounded bean goose eat bread, potatoes, and oatmeal dough from the hand, the second day after capture. Although partaking of boiled potatoes, it much preferred them uncooked.

A sporting friend, residing in the south of Ayrshire, has occasionally met with bean geese in the bogs there, and sprung them from among beds of wild roses, on the fruit of which ("a small mountain species,") they must have been busied feeding, as proved on dissection of those killed. In Ireland, also, he once remarked the gizzard of this goose to be filled with the fruit of the rose.† I have found roots of plants in one. Water-cresses are said to be much eaten by this bird at Dromedaragh. The bean goose was the only one known to the gamekeeper at Ardimersy, Islay, in January 1849, as frequenting that island, which it does regularly in winter. It does not breed there.

A very interesting account of this species and of the white-fronted goose will be found in St. John's 'Wild Sports, &c., of the Highlands,' chap. xix. p. 151–158.

The short-billed or pink-footed Goose—(*Anser brachyrhynchus*, Baillon, *Anser phœnicopus*, Bartlett) though not uncommon in England or Scotland, cannot yet be announced as obtained in Ireland, though particularly looked for of late years. This is very singular, and more especially if there be no error in the statement that the bird breeds in numbers in some of the small islands of the Hebrides.‡ If it do so, we should expect flocks at least to pass over, and occasionally alight on Irish ground when migrating to or from those haunts. All the wild geese which I have seen in a fresh state in Belfast were either *A. segetum* or *A. albifrons*; and in Dublin, those species, with the addition of *A. ferus*.

* Rev. G. M. Black.

† Dr. Richardson, in the 'Fauna Boreali-Americana,' remarks that the "*Anser albifrons* and *A. hyperboreus* feed chiefly on berries" (p. 439).

‡ Mr. John Macgillivray.

The geographical distribution of this bird has yet to be ascertained. It was first described in 1833 from a specimen procured in the north of France, and has since been noticed in Holland and Belgium.*

THE WHITE-FRONTED GOOSE.

Laughing Goose.

Anser albifrons, Gmel. (sp.)
Anas „ „
„ *erythropus*, Linn.

Is a regular winter visitant to Ireland;

Where, as in Great Britain, it is, next to the bean goose, the species most frequently met with. About Belfast this bird is little known; occasionally—not so often as every winter—one or two are brought on sale to the town. One was noted, on account of the rarity of its appearance under such circumstances, as killed on the 26th October, 1822, by a wigeon-shooter from his barrel, near Conswater, Belfast Bay, as he was awaiting the flying of these birds: it was accompanied by two others; its weight was five pounds, the irides of a hazel-colour. A young bird of the year, killed at Strangford Lough on the 19th December, 1834, came under my inspection, as did two others obtained there on the 12th, and a third on the 30th of January, 1836. About the 1st of December, 1844, two of these birds, of which the black-barred bellies, marking the species, were distinctly seen by my ornithological informant, flew low over the shore of Belfast Bay, proceeding in a southerly direction.

Like all the geese, this species soon becomes familiar, and sometimes even bold. An immature one, brought from North America and sent to the Belfast Botanic Garden, was particularly fond of human society, probably from the kindness it had experienced on shipboard, and would at all times leave its pond to join men at work in the vicinity. But its gala day was when a military

* De Selys, 'Faune Belge,' p. 138.

band attended at the Garden, and from two to three hundred people were assembled. So soon as they broke up into groups, after the cessation of each piece of music, the goose took the part of clown on such occasions at a theatre, and was "the observed of all observers," as it paid its respects to party after party by running towards them with its neck outstretched almost on a level with the ground. On one of these occasions, in particular, it caused much amusement by following like an humble servitor at the heels of the lady of highest rank present (a marchioness) for, perhaps, a couple of hours, and bestowing no attention or boldness on any other party. In justice to the goose, we must, perhaps, rather attribute this partiality to something attractive in the dress of the lady, than to any unworthy tuft-hunting propensity. After being about a year in the Garden, the goose disappeared, and not much to the curator's regret, as it showed little regard to the "Arrangement of British Herbaceous Plants" in the vicinity of its pond being preserved intact, having often levied considerable contributions from the soft and more tender kinds; among the saxifrages, sometimes not a leaf was left to tell of their former whereabouts.

To the wilds of Connaught this species resorts every winter, and associates commonly with the bean goose.* It is brought during that season of every year to the market of Dublin, where more individuals of the white-fronted than of the species just mentioned have been seen by Mr. R. Ball. An extensive hawker of wild fowl also states that it has come more frequently under his notice there than the bean goose. It has not been seen by Mr. Ball at Youghal, on the southern coast, and, indeed, in the south generally, the species is considered very rare. The 'Fauna of Cork' announces it merely as having been met with in that county. "In Kerry, two individuals have been obtained, one of which was rescued from the claws of a raven, and lived some time afterwards in confinement, becoming quite familiar." † In severe weather, a very few have occasionally been killed in the counties of Wexford ‡ and Water-

* Mr. G. Jackson. † Mr. R. Chute. ‡ Major T. Walker.

ford.* January and February are the months (according to my notes) in which the white-fronted goose has chiefly been procured.

Audubon gives, from personal observation, a pleasing account of this species, vol. iii. p. 568.

M. Duval-Jouve, in an interesting paper on the 'Migratory Birds of Provence,' published in the 'Zoologist' for October 1845, remarks that the "Grey-legged goose, *Anas anser*, passes in March and April, and re-passes from the first cold of autumn until the beginning of winter: it only rests here when the weather is very cold. Bean goose, *Anas segetum*, passes at the same periods as the preceding species, but is more rare. White-fronted goose, *Anas albifrons*, passes with the two preceding, but is more rare than either" (p. 1130).

Grey Lag Goose.—Since the matter on this species was printed off, the following note was obtained, which it is considered better to bring in here than reserve for the appendix.

March 1850.—Some of these birds were introduced to a lake at Castle Coole, the seat of the Earl of Belmore, in the county of Fermanagh, by Colonel Corry, about one hundred and twenty years ago, and by their breeding there annually since, the stock has been kept up. They build—with straw which is supplied to them—on an island in the lake, where there are usually from sixteen to twenty nests, but not more than ten pair usually hatch;—three birds have sometimes laid eggs in one nest. These geese have always kept entirely by themselves, and never bred with the tame goose or any other species. The flock has sometimes numbered from ninety to one hundred individuals, but has been decreasing of late years, and at present contains only twenty-four. The diminution has arisen from their being shot outside the demesne, particularly during the late year of the famine, and from less care being bestowed on them, as to feeding, &c., than formerly. Some of the young are annually devoured by pike,

* Dr. R. J. Burkitt.

which abound in the lake; and an old swan which frequents it also kills them, in addition to disturbing and beating the old birds. These geese are as free as in a state of nature, but generally admit of a pretty near approach on the banks of the lake, their chief resort, and then take flight either across the water, which is about an English furlong and a half in circuit, or alight in the middle of it, where they are free from intrusion. In severe weather they not only permit a close approach, but come to be fed.

For the whole of this interesting information I am indebted to the kindness of Lord Enniskillen, who told me of this singular flock, and had all my queries respecting it replied to, the chief informant being an old man resident at Castle Coole for sixty years. One of the birds was shot and sent to me on the 14th of this month, that I might satisfy myself respecting the species. This was a very old male, $11\frac{3}{4}$ lbs. imperial weight, and much the handsomest in plumage that I had ever seen, but rendered imperfect as a specimen, by a vile practice in this country, with respect to wild geese, of pulling out the quills, which renders the birds unfit to be "set up." The tarsi, toes, and webs of the feet were of a flesh-colour similar to that of the human hand; bill flesh-red with pale orange towards the base of both mandibles. Nail of bill, white; that of middle toe, dark grey; of outer toes, white: irides hazel. The blackish markings on the breast and belly appeared as in the other Irish specimens noticed at pp. 28 and 29. The gizzard contained the remains of vegetable matter and a quantity of small pebbles. Though the skin of this bird was preserved, the body was cooked, and was partaken of by several persons, all of whom considered the flesh of a delicate flavour, though it was hard and tough, probably from want of being long enough kept; it was very dark in colour.

THE BERNACLE.

White-faced Bernacle.

Anser bernicla, Flem.
„ *leucopsis*, Bechst.

Is a regular winter visitant to the coast.

The food of this bird being different from that of the brent goose, the haunts of the two species are wholly distinct. The extensive sandy coast exposed by the receding tide, bordered by short pasture, or having islets of this nature rising here and there above its level surface, is the favourite abode of the bernacle. The brent goose, on the contrary, revels in the soft oozy bays where the *Zostera marina*, or grass-wrack, grows profusely, and on it alone is content to feed.

The greatest haunt of the bernacle known to me is an immense shallow sandy bay, on the coast of Louth, bordered by an extensive tract of pasture and marshy ground, called Lurgan Green. From this locality the bird takes its name, and is called the Lurgan Green bernacle over a considerable part of the island, to distinguish it from the brent goose, which bears the simple appellation of *the* bernacle. The latter bird is generally highly esteemed in Ireland for the table, while the former is not at all relished. Yet, in other places, it is so. Mr. Selby, writing from Northumberland, says, "its flesh is sweet and tender and highly esteemed" (p. 269). The author of 'Wild Sports of the West' bears his testimony to what he terms "land bernacle" being "very delicious when kept a sufficient time after being shot, before the cook transfers them to the spit" (p. 292). To quote further from this work, it is said of "the barnacle," meaning most probably, from the great numbers seen, the brent goose,—"I saw a considerable extent of sand literally black with this migratory tribe: they come here in immense multitudes, but, from their coarse and fishy flavour, afford little occupation to the water shooter. The land barnacles are less numerous, although they are found in tolerable abundance.

During the day I saw two flocks, of one or two hundred pairs, upon the bogs. They are, when sufficiently rested from their journey, sought for with great avidity by the few gunners in this district, and are very delicious," &c., as already mentioned. This was written as "winter was coming on." Owing to wild geese being commonly called bernacle in Connaught, I cannot feel certain that they are not meant. Harris, in his 'History of the County of Down,' published in 1744, after enumerating the "barnacle" as one of the birds met with on the coast, remarks: —"There is also the land barnacle in this county, particularly in a red bog in the Ardes, near Kirkistown, but the flesh of it is rank, unsavoury, and unfit for, at all events, the table." Here, again, the wild goose may possibly be alluded to, as it frequented the locality. *Land* bernacle is, however, a common name for the species now specially under consideration, and a distinctive one, as the bird spends much of its time on land, whereas the other bernacle, properly called brent goose, lives wholly on the water and the sea-banks.

At Lurgan Green immense numbers of bernacle spend all the year, except the period appropriated to the reproduction of their species; they are about five months absent, from the middle of April* to that of September. This locality is known to me personally only from my passing it on the way from Belfast to Dublin, which I have rarely done without seeing large flocks of these birds (numbering sometimes between 300 and 400) either on the sands or greensward little raised above it. My notes on them here, chiefly with regard to season, are;—March 31, 1833; saw a very large flock on the sands near the road:—April 21, 1835; none seen; on inquiry of the guard of the coach, it was stated that he had remarked them here daily until the last eight days, when they had disappeared, at least from view of the road: they had probably migrated northward at the time he ceased to observe them:— November 15, 1839; a large flock was stationed at the grassy plain, a considerable way from the border of the sea, as I had

* Mr. Selby, in allusion it may be presumed to the north-east of England, observes that, "by the middle of March the whole have retired" northward (p. 269).

before remarked them in spring, but not so near to the road. I have seen them within shot of the coach, and as regardless of its passing as a flock of tame geese, indeed more so, for the latter would have had the impudence to cackle, while the bernacle had the good taste to remain silent. They were never feeding when I observed them, though, doubtless, they partake of the pasture. No person having been permitted to fire a shot about Lurgan Green was the reason of their tameness. They were captured here in little pitfalls dug in the earth, without being in the least degree injured. Several were so obtained at one time to be placed on the aquatic menagerie at the Falls near Belfast, where they at once became tame, and proved to be of a mild and gentle disposition, like the brent geese;—more than can justly be said for all our *Anatidæ*. The ground alluded to, on which the bernacle was seen from the coach-road, was embanked from the sea a few years ago, and brought under cultivation; since which period I have not learned anything of the bird there.

On the 20th of October, 1849, and about the same period of the preceding year, flocks of about twenty bernacle were observed (by the Rev. G. M. Black) flying over the sea and points of land in a southerly direction off Annalong, at the base of the mountains of Mourne. They were supposed to be proceeding to Lurgan Green. "They flew in a line like wild geese, but differed from these birds by keeping always low—about twenty yards from the sea or ground—and, when viewed through a telescope, were headed by an old stager, whose adult plumage was strongly defined."

To Belfast Bay the bernacle is but a rare visitant, and chiefly early in the winter; but, at the beginning of August, a single bird was once obtained. One which came under my inspection was shot on the 1st of November, 1826, upon a little green islet which rises above the sands at a place called Harrison's Bay. A small flock to which it belonged frequented the little green knolls rising above the sands, and the boggy fields bordering the bay, for some weeks. Persecution at last drove them away. One was killed on the Long Strand close to the town, on the 26th of March, 1827, when a flock of ten birds visited this locality and the

neighbouring pasture-fields. At the end of September 1830, a bernacle was obtained at Kilroot, below Carrickfergus, and in November 1833, six were shot about the same time on the banks, at different parts of the bay, within two miles of Belfast. Early in the winter of 1846, one was seen on a bank in company with curlews. A bernacle was noted as being on sale in the market of this town on the 14th, and six on the 19th of September, 1837; but, as it is not mentioned where they were procured, the only use of the note is to show that at the time, the species was on some part of the coast;—these birds may have been brought from Lurgan Green.

On Ballydrain Lake, a beautiful sheet of fresh water near Belfast, covering about twenty acres, (and, perhaps, five English miles in a direct line from the sea,) a flock of eleven bernacle was seen by Mr. Darragh on the 2nd of April, 1849. It was stated by persons living on its borders, that these birds had frequented the locality for a considerable part of the winter. They were very wild, keeping about the middle of the lake, and, when any person approached its margin, they took wing to its opposite extremity. During the entire day they remained on the water, but were not observed by night, when, probably, they fed on the short grass upon the banks. In the following winter three bernacle made their appearance here at the latter end of November; soon afterwards, two, and before long, four more joined them. These nine birds remained until the end of the first week in February, when, farming operations being commenced on one side of the lake, they took their departure. Four of them appeared again several times during the ensuing week, but the bustle of the season always frightened them away. This is the only instance known to me of the species resorting to fresh water in the north of Ireland. On the 15th of February, a female bernacle in fine condition, and probably one of the same birds, was shot at "the bog meadows," about three miles distant. Its stomach was filled with the shamrock trefoil—*Trifolium repens* (of which there were a few pieces from four to six inches in length that had been pulled up by the root), pieces of *Ranunculi*, and grasses.

The only regular haunt of the bernacle known to me during

every winter, on the Irish coast, was that of Lurgan Green. Everywhere else that the bird has come under the notice of my correspondents it is of rare occurrence; in the north-west of Donegal, on the coasts generally of Dublin, Wexford, Waterford, Cork, Kerry, and Clare, it is reported to be scarce. Twenty-nine birds were killed at one shot from a swivel-gun a few years ago at Malahide, on the coast of Dublin. A flock was observed in Dublin Bay on the 20th of January, 1850.* In December, 1847, three were shot in the harbour of Wexford. The first seen by Mr. R. Chute, in Kerry, was a male bird, killed from a small flock on a little lake to the west of Dingle, in the middle of November, 1848.

Montagu, in the Supplement to his 'Ornithological Dictionary,' remarks:—"This species has generally been said to be abundant on the coast of Ireland in the winter-season; we are, however, informed by Sir William Elford, that it is certainly a mistake; the brent being commonly called by the same name has probably occasioned the assertion, for that bird is taken in the bay of Belfast, and other northern parts of that island in great abundance, but he never could discern the *Erythropus* among them."

When visiting Loch-in-daal, island of Islay, in January 1849, I observed that it possessed suitable feeding-ground for both the bernacle and brent goose; extensive tracts of sand, with abundance of low bordering greensward for the one, and spacious banks of *Zostera marina* for the other. A flock of about two hundred brent geese was seen standing by the edge of the retiring tide. I was gratified to learn from Mr. Murray, formerly gamekeeper at Islay House, that the loch is frequented by both species. The *A. leucopsis* is called there "land bernacle;" it has been becoming scarcer of late years.

Willughby (1678) remarked of the bernacle and the brent goose, (which two species he was the first author to distinguish properly,) that:—"we have seen both alive among his Majesty's wild-fowl kept in St. James's Park," p. 360. It is pleasant to the ornithologist to think, that, although the keeping up of a stock

* Mr. J. Watters, jun.

of wild fowl here was neglected for a long period, both these species may now again, more than 170 years after the above was written, be seen in St. James's Park, and in company with species which were wholly unknown at that period.

A number of the strangely fanciful old stories respecting this and the following species being produced from the *Cirripede* of the same name, which adheres to the bottoms of ships, are brought together in the volume of the 'Library of Entertaining Knowledge,' entitled 'Habits of Birds,' p. 363. The belief is still current among the Irish fishermen and those who dwell about the sea.

THE BRENT GOOSE.

Anser brenta, Flem.
,, *bernicla*, Linn. (sp.)
,, *torquatus*, Belon. (sp.)

Is, except in summer, a constant inhabitant of suitable localities around the coast.

This species is commonly described by British authors, as much more frequent on the eastern coast of Great Britain than on the western, on which the bernacle is said to be chiefly found. Even on the coast of the county of Sutherland, which stretches across Scotland, the distribution of the two species is stated to follow the same rule.* This cannot be owing to any laws of geographical distribution, as the brent goose is in Europe† abundant still farther to the west than Great Britain;—namely, in Ireland, where it is found on each side of the island, according to the simple rule of the suitableness of the locality—an abundance of *Zostera marina*, in so far as my observation extends, determining that point. Montagu, too, had remarked, in reference to this island, that brent geese "are in greatest abundance in those rivers that empty themselves into

* St. John, 'Tour in Sutherland,' vol. i. p. 139.

† It is common on the coasts of the United States, &c., of America.

U. OF ILL. LIB.

the *northern* part of the Irish channel." Their chief haunts known to me are, to begin northward, Loughs Swilly, Foyle, Larne, Belfast, Strangford, Dublin Bay,* the harbours of Wexford, Waterford, Youghal, and Cork. In Kerry they are confined to Tralee Bay, being abundant there during winter;† and are stated to be so likewise in the bays of Connaught.

The bird is thus mentioned by the following authors :—

According to Boate's 'Natural History of Ireland,' published in 1726, "barnacles are of the wild-goose kind, and like them migrate from foreign countries to Ireland; they commonly come into Ireland in August, and leave it about March; their taste is very different, according to the places where they feed; in most places they are so rank that no curious palate can dispense with such unsavoury food; but in other places they have a most delicious relish, rather better than either a wild duck, teal, or snipe.‡ This is the case of the barnacles at Londonderry and Wexford, and I hear the same concerning those at Belfast: the difference, I understand, arises from the food; at Londonderry, in the bay commonly called Lough Foyle, there grows a grass that sends out a stalk above a fathom long, the root of which is white and tender, and continues such for some space above the root, and it is almost as sweet as a sugar-cane :§ the barnacles dive to the bottom and lay hold on it as near as they can to the root, and pull it up with them to the surface of the water, and eat the tender part of it, the rest they let drive with the wind to the shore, where it lies in great heaps,

* Very common from November to April, (Mr. R. J. Montgomery.)

† Mr. R. Chute.

‡ In works published in 1848 and 1849, opposite opinions are expressed respecting the quality of this bird as food. The Rev. E. S. Dixon, in his volume on 'Ornamental and Domestic Poultry,' when expatiating on white-fronted geese, alludes to an unfounded supposition that "their flesh would be fishy, as in the scarcely eatable brent goose" (p. 94); and in another place mentions this bird as "fishy, strong, and oily" (p. 151). Mr. Knox, on the contrary, in his 'Ornithological Rambles in Sussex,' remarks on it :—"This is the best bird I ever tasted; the flesh is as tender and juicy as that of a teal, and there is a total absence of the fishy flavour, which renders so many of our water-fowl unfit for the table" (p. 236).

§ Hence, we may presume, set down in a work published in 1837 as *Fucus saccharinus*! In the description of the county of Londonderry, in Lewis's 'Topographical Dictionary of Ireland' (vol. ii. p. 294), we learn that "Among wild-fowl, one species is very remarkable, the barnacle, which frequents Longh Foyle in great numbers, and is here much esteemed for the sweetness of its flesh, in like manner as at Wexford and Strangford, though elsewhere rank and unsavoury; this difference arises from its here feeding on the *Fucus saccharinus*."

and when rotten is good manure for land : * and from this sweet grass it is supposed proceeds the sweetness of their flesh ; they are taken by nets set in proper places on the shores. 'Tis observable that the divers and wigeons, which are very rank and unsavoury elsewhere, undergo the same change of their flesh when they feed in this place" (p. 192).

Harris, in his 'History of the county of Down' (1744), says of the "Barnacle, called by the English, Brant Goose,"—"All along the flat oozy sands, from Three-mile Water to Belfast and Holywood, grows a very sweet grass affording food to great flocks of these birds, as well as to duck, wigeon, and teal, all which are as good here as in any part of Ireland, and some imagine them better than in the neighbouring loughs of Strangford and Larne; but this is only the effect of fancy, for they often fly from one lough to another, and feed promiscuously.

"They are birds of passage, and know their seasons so well that they arrive every year in the north parts of Ireland, on or very near a certain day, that is, the first flights of them, for they do not always come together. They are seldom seen sooner than the 24th of August, and are rarely missed about that time. But they are not so regular in their flights from this country, some going away in April, and some staying till the middle of May. * * * After their young are ready for a strong flight, they return to us, by which time they find a new harvest of sea-grass ready for them here" (p. 234).

Smith, in his 'History of the county of Waterford,' completed in 1745, speaks of—"Barnacles, which we have in plenty in winter, being of as good a relish as at Londonderry, Wexford, or elsewhere; we have the same kind of grass described in the appendix to Boate's 'Natural History of Ireland,' which it is said they feed upon, and which gives them that peculiar sweetness in those places where this grass is found. The roots of this grass are white and tender, and of a sweetness resembling liquorice; great quantities of it are often cast up on the coast after a storm."

In Mason's 'Statistical Account of Ireland' (vol. iii. p. 400), published in 1819, the following notice of wild-fowl appears in a history of the 'Union of Tacumshane [county of Wexford], by the Rev. Wm.

* This plant, the grass-wrack (*Zostera marina*), or sleech-grass of Belfast Bay, is still used most extensively as manure by farmers, both poor and rich, who are little aware how much they are indebted to the brent geese, wigeon, and other wild-fowl, for rooting it up. Partaking themselves of but a small portion of the plant, these birds let the remainder float off to the shore, where it is appropriated by man to his use.

Eastwood, Rector :'—" Besides the advantages already described from its local situation, this country has the peculiar benefit of possessing a certain grass or sea-weed which maintains myriads of wild-fowl, and gives them a taste and flavour superior to those of any other place or country. The most abundant crop of this grass is found inside the harbour, from the island of Woodtown to within two miles of the town [of Wexford], and to the extremity of the bay eastward. There are two loughs at some distance, where it also grows, though not so profusely, and to these outposts the birds take their flight when the tide rises in the bay above the weed, and make a pass through the air as regular as if it were meted out, from which they never deviate. Under these lines fowlers take their stand, often with great success, particularly in dark and blowing weather. The number brought to market is not easily ascertained; it is, however, reasonable to state it at 200 couple a week for six months every year. The average prices may be thus—barnacle, 6s.; whinnard, 3s.; wigeon, 2s. 6d.; teal, 1s. 8d.; and duck (least liked), 2s. a pair. Besides these, there is a great supply of sea-fowl of an inferior quality, which are bought up and considered very good; this sale produces £80 a month, or above £1,000 a year [£500 for "six months"]. They are purchased by carriers, who convey them through the country and into the adjacent counties, and make a good livelihood by retail. Some are despatched in the mail and day coaches to Dublin, where they are esteemed, and, as it is said, many baskets are sent across the channel."

All the statements respecting the habits of the brent goose contained in these extracts is not correct; but as it is pleasant to see that the subject has long since engaged attention, I shall not be so ungenerous as formally to criticize them. I shall, instead, describe in full detail, as at present known, the

Habits of the Brent Goose in Belfast Bay.

The old accounts of the time of arrival and departure are correct. The earliest period I have noted is the 20th August;* and

* Their appearance in this month is of common occurrence. The three latest notes I made on the subject are—August 27, 1845. Brent geese have arrived in Belfast Bay;—August 24, 1847. A flock observed on wing above Larne Lough;—August 25, 1848. Four killed in Belfast Bay; the earliest this season, and no more yet seen.

by the first week of September they are generally here. They sometimes remain until May; and in 1841, a few were seen so late as the 20th of that month. In Wexford harbour, also, they are said to arrive in September and leave in May.* They come later to the Northumbrian coast in the autumn, and depart northwards earlier in the spring. Mr. Selby, writing of it, remarks:—"In this locality tolerably-sized flocks usually make their appearance in the early part of October, which are increased by the repeated arrival of others till the beginning of November, at which time the equatorial movement of the species in this latitude seems to be completed. * * * In this haunt they remain till the end of February, when they migrate in successive flocks, * * * and before April the whole have disappeared" (p. 272). A flock of these birds, supposed to be on migration, was heard on the 9th of September, 1845, at 12 o'clock in the night (which was very dark), flying over Holywood bank, Belfast Bay. The weather being calm, they were heard from a great distance as they approached, and afterwards as they passed overhead;—they kept a direct southerly course.

Owing to their being so much disturbed of late years in this locality, chiefly by the increase of shipping, they have not (unless in severe weather) been in such abundance early in the winter as formerly; but in Strangford Lough they are as numerous as ever at that period. About the month of March, the greatest numbers now appear in Belfast Bay; and wild-fowl shooters believe that they leave the comparative quiet of Strangford Lough after having exhausted its *Zostera* pasture, as they have remarked the banks to be closely cropped of the plant at this time.

Dr. Fleming mentions this bird as "a winter visitant, frequenting meadows and grass-fields;"† and Mr. Jenyns says it "frequents the sea-coast and also inland marshes" (p. 224); but is not the bernacle, instead of the brent goose, the species thus alluded to? Those of Belfast Bay at least are strictly marine; and I have never heard of a single individual here, even when wounded, flying to

* Major T. Walker. † Brit. Anim., p. 127.

land, or to fresh water, as other marine birds in that case do. Their nearest approach to land known to me was during the night of a hurricane, when a great number remained on the Long Strand, within half a shot of the fields bordering the bay :—they were known to do this only in the one instance.*

Although they may occasionally feed by night, such is not their habit : they are day-feeding birds. When a south-east wind drives them towards the Antrim side of the bay, they may sometimes be seen with the naked eye busily feeding, and in so doing, dipping half the body under water, and exhibiting, conspicuously, the white under plumage from the legs to the tail. They likewise feed while walking on the *Zostera* banks, left bare by the falling tide. In seasons when there was a continuance of easterly winds, opportunities were daily afforded during several weeks in spring, of observing great flocks of brent geese going through all their evolutions within about three shots of the road which borders the bay on the western side, and at a distance of from one and a half to two and a half miles from town. A railway embankment, constructed within the last few years, has, however, shut out this prospect; and fields of corn now wave where banks of *Zostera* then prevailed. They fly to the deep water in the afternoon, and remain there during the night. At sunrise—not before dawn, like the wigeon—they commence flying to their feeding-grounds, at which time, particularly in March and April, they were formerly shot at low water by fowlers, using ordinary guns, and having their small boats in the creeks. These men required to be cautious of exposing their countenances, as the "human face divine" alarmed the birds much more than the body of the shooter. Many brent geese were commonly thus killed before swivel-guns came into use, but that mode of shooting has since been rarely followed. Another method, chiefly practised late in

* Mr. R. Davis, jun., writing from Clonmel, in 1842, remarked;—"One of these birds was shot in our river by an uncle of mine some fifty years ago." A friend of Mr. J. Poole's (as noted in his journal in January 1848) informed him that "he once shot a brent goose from the bridge of Enniscorthy, a town nearly twenty-five miles up the Slaney. A heavy snow-storm, which made it impossible to discern objects at any considerable distance, may account for these geese finding their way such an unusual distance from the sea."

the season and during the day, has likewise been discontinued. I allude to fast-sailing "cots"* and yawls—the latter being preferred,—which, with a brisk wind, would sometimes bear down upon large flocks before they were aware of their danger; and in such case, the brent geese, by rising against the wind as they always do, and the boat still bearing on them, would be half a shot nearer to the fowlers than they were when swimming. As they fly at a later hour in the morning than the wigeon, so in the evening they retire earlier than that species. They were sometimes sought for when on their seaward flights, by fowlers awaiting them in their boats in the creeks; but as they were then in large bodies, fewer chances were afforded of getting shots.

They very rarely appear "up the bay" in moonlight nights. When seen there, some of the shooters imagine that when the moon rises it is mistaken by them for the morning dawn. In stormy nights they will occasionally "come up" for shelter, and I have known them, at least once, to be killed, but they are never sought after at night like other wild-fowl.† It should be stated, that when flying up in the morning, they generally proceed in small flocks, and alight altogether about the same place, thus, after the flight has continued for a long time, forming a great multitude; but in the afternoon, this whole body will rise *en masse* to retire to deep water for the night. If high water, early in the morning, at their usual hour of flight, they await the ebb before leaving their night quarters. They are very wary, and avoid in their flights approaching objects with which they are unfamiliar, as new beacons, &c., erected in the harbour. A branch of a tree brought down the Lagan by a flood, and covered with sea-weeds so as to give it a dark appearance, will alarm them, as will the smoke of the steam-vessels even from a distance. Any thick smoke seen overhead by the *Anatidæ* generally, when on the water, excites their fear, and prompts them to take wing.

* Small flat-bottomed boats.

† Sir Wm. Jardine observes that:—"In Ireland this goose is also abundant, and furnishes most of the night-shooting which is much followed on various parts of the coast."—'Brit. Birds,' vol. iv. p. 81.

One of my notes descriptive of their mode of flight, &c., may be copied:—*March* 9, 1839. Day beautifully bright, but very cold, and the wind east. I saw, on the Antrim shore of Belfast Bay, a very large flock of brent geese, apparently from 700 to 800, first on wing, forming a "long, drawn-out" body, and then alighting. The mingling notes of those on the water, and of the others still on wing, but crowding down to join them, was so like the cry of a pack of hounds, that it would have deceived any one who knew not whence it really proceeded. As my walk was continued, there was a constant succession of bodies of these birds of from ten to twenty-five flying to join the main phalanx, until probably not less than a thousand were assembled together;—a number not greater than I had frequently observed here before. The whole of them looked beautiful on wing. When seen backed by the sky, the black and the white portions of the body were distinctly apparent;—when their backs were turned towards me they seemed all black, and their whole form was distinctly marked; but in another aspect, and with the land of the opposite shore as a back-ground, they all shone merely white, the lower portion of their plumage of that colour being alone visible. The great flock did not long remain stationary, but rose *en masse* and flew towards the entrance of the bay until entirely lost to view. The appearance of the flock, though generally irregular, and "floating in fragments" through the air—their ordinary manner of flight—occasionally exhibited a series of lines, all of which became darker towards the front, reminding me of water-spouts darkening towards the end before they burst. The broken, irregular flight of a great body of brent geese has more than once called to my mind Moore's lines,—

> "When heaven's rack, 'twixt earth and sky,
> Hangs like a shattered canopy."

Their call is commented on in another note:—*April* 2, 1837. I observed, to-day, when near low water, several hundred brent geese standing on the ooze at the edge of the retiring waves like a flock of 'waders.' They were calling at the time, and, when they rose

on wing, continued their notes in the air, as they likewise did after having settled on the water. The rushing sound this flock produced when rising at about a mile distance from me, resembled some "elemental war." Their call, as heard at two miles' distance, was quite loud. Audubon remarks:—"As to its cry, although I have often seen hundreds of individuals at a time, I have not been able to tune my ears so as to liken its cacklings to the sounds produced by 'a pack of hounds in full cry,' as alleged by Wilson"* (vol. v. p. 24). True, when the cry is borne directly to one from a flock of birds swimming in order, it is not sufficiently varied to be musical; but when the birds are veering about on wing, or swimming in different directions, it strongly resembles what Wilson has compared it to. But I shall call a witness in favour of the statement, that, under cross-examination, will not break down. *March* 8, 1840; a delightful, warm, calm day: on riding from Belfast to Holywood at high water, birds of various species were abundant. Opposite Clifden, and very near the shore, were perhaps 500 brent geese in a flock, keeping up their usual concert, like the music of a pack of hounds in full cry. The moment that, borne on the gentle gale, my horse heard it, he became quite impatient, as hunters do on hearing the hounds at a distance, and continued very spirited and restless so long as he was within hearing of the sound; just as he would have done had it proceeded from a genuine pack. Thus have we the acute hearing of the horse bearing testimony to the resemblance; and this sense in the quadruped is superior to that of his lord and master—Man. I have often, when going to join the hounds, had evidence of this, as on gaining the ridge of hill that overlooked the hunting ground a few miles distant, our horses indicated that they recognized the cry before we did ourselves. I do not remember having been in any other instance on horseback within hearing of "the cry" of the brent geese.

The rate of swimming of these birds is quick. Once, when walking along the side of the bay, and a flock of about 300, not

* Wilson also alludes to their "honking" voice, which, in the north of Ireland, is called "cronkin," both words representing the sound produced.

far off, swam in a direction parallel to that in which I proceeded, I was surprised to find that their progression, when quite at ease and undisturbed, considerably exceeded mine; it could not have been less than about four Irish miles an hour—my rate of walking at the time being three of these miles. When their speed was increased by seeing the small old-fashioned shooting cot approaching, they swam faster than it could be "set on them."

January 1847.—The following information was communicated to me respecting the brent goose at Larne Lough, where it is numerous during winter. Every evening, at this season, they fly down the lough to remain on the deep water near its entrance or outside, in the open sea, for the night. After sun-rise—the sun being always up before they leave—they invariably fly up the lough to their day station. Later in the season, they all betake themselves out to sea in the evening, and every morning then, a line of boats containing shooters is stationed at regular intervals across the narrowest part of the entrance of the lough (at the ferry), to intercept them in their flight. The water is rarely too rough for this proceeding, the boats being often almost invisible among the breakers. Notwithstanding this daily practice of the shooters, the birds always take the same course of flight, above the water, but generally keep so high that not many are killed from the boats. Once only has my informant observed the brent goose to feed by night here, when a few birds out of a flock were so noticed by moonlight.

During the last week of this month (January, 1847), brent geese were very numerous and tame, both in Larne and Belfast loughs, though the weather at the time, as well as that preceding and subsequent to it, was fine. They appeared in such long, solid masses, as to be compared to highways on the water. At such times, the fowler speaks of shooting "along a mile of them." They were higher up both loughs at night than previously known to be, and, in the latter estuary, approached within about two furlongs of the quays of the town. Seventy-nine birds were killed here during the week by a wild-fowl shooter, fourteen of which

fell at one shot. Fifteen were at the same time obtained at a shot, in Larne Lough, by another fowler. In Strangford Lough, the person first alluded to, procured twenty-three at one discharge of his swivel-gun, in the winter of 1843; in January 1848, thirty were thus laid low, twenty-five only of which were bagged, as the great black-backed, and herring gulls secured their share of those which fell wounded or dead at a distance. Above thirty lay upon the water after a shot by him there, in December, that year, though only twenty-three were picked up, as it was growing dark at the time, and the wounded, hurrying to rough water, escaped. Twenty-six wigeon were bagged by him from one shot, the same week. Thirty-two brent geese have been obtained at a shot in Larne Lough. Shooters waiting at night on the borders of this lough until the flowing tide brings wigeon within shot of them, have occasionally killed brent geese, thus brought within range. In the winter of 1842–43, Buckle (well-known to the readers of Colonel Hawker's work on Shooting) killed twenty-five of these birds at a shot with his punt-gun in Dingle Bay, Kerry.

Winged brent geese flock together, and it is difficult to separate them. Those struck by the shot from a swivel-gun, no matter how far apart, swim towards each other, and move off in a flock, which is not easily broken up. When they become so by a chace from a boat, or otherwise, as many as can succeed in keeping together still do so. They hasten to the deep water when wounded, and never attempt to dive until the last extremity, such as being struck at with an oar. They are indifferent divers, and remain but a short time under water. When disabled birds were much fired at with the old flint locks they dived from the flash of the pan.

The food contained in brent geese from the loughs of Larne, Belfast, and Strangford, examined by myself, was always *Zostera*, of which were portions of the leaf from one to two feet in length, as well as of the root: in addition to the plant there was always sand. An observant shooter and bird-preserver,* who has looked to the food in a considerable number of these geese, never found

* Mr. Darragh; to whom I am indebted for various particulars respecting the brent goose.

anything but *Zostera*. This was generally in pieces about a foot in length, which, when so long, were always folded neatly up, sometimes as much so as a ribbon, but short pieces were not so arranged. He well remarks that they must fold this narrow leaf with the tongue, and that it is a nice provision of nature to enable them to swallow such food with convenience: he has found it in the folded shape in the throat.* Until November, these birds are not much sought after for the table in Belfast. They have been becoming gradually cheaper of late years. In the winters of 1843 and 1844, I noted them, as generally sold in the shops, at 2s. a bird, but as formerly dearer, and that the shooters then obtained from 1s. 3d. to 1s. 6d. each for them;—in the winters of 1848 and 1849, 1s. was about the usual sum they received. Brent geese vary much in size and weight.

Mr. Jenyns remarks that "the young of the year" have no white on the side of the neck, and Mr. Yarrell says, little or none. In their infancy such may be the case; but to the young of the year, as this term is understood by ornithologists, it is not applicable. I do not remember ever to have seen one from the end of August, when they are first killed, without some indication of white on the sides of the neck, where, in adult birds, the patch of this colour is conspicuous and well-marked. By much the greater proportion of brent geese killed here, especially early in the season, are the young of the year. Looking to this point particularly in 1840, it was noted under the 2nd of November, that although for the last six weeks these birds were constantly on sale, I had not seen an adult until that day: on the 9th of the month, three out of four which I saw hanging at a shop-door were old birds.

Montagu states:—"We are informed some of these birds breed in Ireland." I have not seen any record to that effect, but am credibly informed that, about thirty years ago, one pair built a nest on Swan Island, Larne Lough, in which eggs were laid,

* *March* 1850. I examined a number of folded pieces of the *Zostera* from a brent goose (taken from the throat to the stomach inclusive), and found the longest piece to be 18 inches; its breadth was $\frac{1}{4}$ of an inch.

Wilson, in his 'American Ornithology,' remarks that "their principal food is a broad-leaved marine plant, but that they also eat small shell-fish" (vol. iii. p. 166).

but these were carried off. The birds were supposed to have remained in consequence of having been wounded, as were others, since seen and shot there in summer.

Although the brent goose is a wary species, it becomes at once tame, when wounded, and on the first day of its captivity under the cabin roof of the wild-fowl shooter, has eaten of oats or porridge. In one instance known to me, it drank water from a cup held in the hand, and nibbled over the fingers of its cup-bearer as if seeking for food. This bird preened its plumage, too, on the floor of the house, some hours after capture, and seemed in all respects as much at home as if it had been on the high seas. I have frequently known these birds, when slightly wounded, and secured from again taking flight by being pinioned, kept at country seats, where there were ponds, about Belfast. They remained there apparently quite contented at all times, except at the migratory season, when they became very uneasy, running backwards and forwards, flapping their pinioned wings in extreme anxiety to be off to far northern summer haunts. Some kept at the Falls, without being enclosed, had to be narrowly watched every year when under the influence of the vernal migratory movement. They then wandered as far northward as they could proceed with their disabled wings. One, kept at Cranmore, the residence of John Templeton, Esq., for nineteen years, acted like those just described every spring for about the first twelve years; after which period it ceased to exhibit any particular feeling at that season. These brent geese either fed on grass, like the tame geese, or took share of whatever food was supplied to poultry or other domestic birds about the place. A flock of seven—all birds obtained by being wounded—kept for the last two or three years by Mr. R. Chute, in Kerry, resort to the fields and feed wholly on grass. Brent geese are mild and gentle in disposition. At the Falls, where they were kept for many years, they were never seen either to quarrel among themselves (of which bernacle there were occasionally guilty), or with other birds, as Wilson accuses their American brethren of doing. The shooters of the north of Ireland bear testimony to the good and amiable character of the

wild brent geese towards each other, and towards all kinds of ducks;—they call them "innocent birds." Wigeon, mallards, &c., may frequently be observed mingled with them on the water, towards the extremity of the flock. On wing, they do not associate with any other of the *Anatidæ*.

THE RED-BREASTED GOOSE.

Anser ruficollis, Pall.

Cannot be recorded with certainty.

When in Dublin, in March 1833, I was informed by a person to whom the species was well known, that about five years previously he had seen a specimen in the shop of Mr. Glennon; on inquiry of whom, I learned that the bird had been sent to him in a fresh state, to be preserved, but he was not aware where it had been killed. That it was procured on our coast is at least a fair inference.

Very few individuals of this species—of which little is known in any country—have been obtained in England, and none in Scotland. The bird is a native of the north of Asia.

THE EGYPTIAN GOOSE.

Anser Ægyptiacus, Linn. (sp.)

Has occasionally been shot on the coast.

But from the circumstance of the species being kept on ponds, whence it sometimes wanders, I have not always committed to writing the instances in which it was obtained. Two notes only on the subject are before me. The first mentions one bird as having been shot near Moira, county Down, in the middle of January 1833. The second, my having, on the 12th of October, 1834, seen two individuals which were shot from a flock of fifteen on the river Lagan, near Belfast, on the 9th of that month. A gentleman of my acquaintance, on seeing these specimens, stated

that on the 10th or 11th (the following day or the second after the pair was killed), he saw a flock of about eighteen fly over his ship-yard at Belfast, very low, and proceed in the direction of Lough Neagh. Subsequently, but in what year I do not recollect, I saw a couple on sale in a poulterer's shop in that town.

I cannot think that the birds here noticed were truly wild, though this species may, possibly, as well as others from the south-east of Europe and north of Africa, occasionally visit this island.

A place is given to the Egyptian goose among British birds by Yarrell and Jardine, and among those of Belgium by De Selys Longchamps.

About thirty-five years ago, Egyptian geese were kept in numbers on lakes in Hillsborough Park, county Down, and the only time at which any could be captured was the moulting season. A friend, who had lost one of his, wished its place supplied, and with permission from Lord Downshire to take a bird from his stock, went thither, where, after considerable difficulty, he succeeded in rowing one down.

The Spur-winged or Gambo Goose (*Anser Gambensis*, Briss.) has a place in the British catalogue, from the circumstance of a single individual having been obtained in Cornwall, in June 1821. The species is a native of northern and western Africa.

THE RUDDY SHELLDRAKE.

Ferruginous Duck, Bewick, edit. 1826.

Tadorna rutila, Pallas (sp.)

Anas casarka, Linn.

Has once been obtained;

As noticed by me in the 'Annals of Natural History' (vol. xx. p. 171). The bird was shot on the Murrough of Wicklow by Mr. John Moreton, of that town, on the 7th of July, 1847. The Murrough is an extensive, low, sandy tract bordering the sea,

such as is resorted to by the common shelldrake (*T. vulpanser*) for the purpose of breeding. On the next day the specimen came into the possession of T. W. Warren, Esq., in whose collection it now is. Its plumage indicates a male nearly adult.

Three individuals only of this species have been procured in England—the first in 1776, the last in 1834—and none in Scotland. The ruddy shelldrake rarely visits any part of western Europe; its abode on that continent being in the eastern parts. It is found extensively over Asia.

THE SHELLDRAKE.

Shieldrake; Burrow Duck.

Tadorna vulpanser, Leach.
Anas tadorna, Linn.

Is found around the coast, and is indigenous.

But very few of these beautifully-marked birds now breed on the sandy coasts compared with what formerly did so. According to Harris's 'Down' (1744):—"The shelldrake breeds in rabbit burroughs on the shores of this county, particularly about Killileagh and the south of the barony of Lecale;"—whether or not it now frequents these localities is unknown to me; the following notes relate to other parts of this county. When visiting the islands of Strangford Lough, in June 1832, I was told that "scale-drakes" bred annually on some of them, and imagined that this species might be meant; but on cross-examination of my informants, I ascertained that the red-breasted merganser must be the bird so called. This was soon afterwards confirmed by one of these coming in sight, to which the name of scale-drake was applied. When visiting Dundrum in 1836, I was told that the shelldrake still breeds on the extensive marine sand-hills there. On the largest of the Copeland Islands they bred annually until the beginning of the present century, when it became inhabited. The chief farmer there, in 1827, imagined that they

and the rabbits were contemporaneous, telling me that so long as the rabbits were numerous the shelldrakes bred regularly; but since the former were all destroyed, the birds ceased to visit the island for that purpose. At the Kinnegar, near Holywood, Belfast Bay, it is said that they annually bred until a late period, when the locality became too much frequented:—a pair, however, made the attempt in a rabbit-burrow here in the summer of 1832, but the nest was discovered and robbed of several eggs.

Even on the extensive sands of the wild peninsula of the Horn, in Donegal, where if these birds require the aid of rabbits to burrow for them, there are thousands of such pioneers, I was told, in the summer of 1832, that they had ceased to breed. The shelldrake still continues to resort to the rabbit-holes in the great sandy tract of Magilligan, on the coast of Londonderry. Their eggs are sought after by the neighbouring peasantry, who place them under hens, and when the young are reared, a ready market is found for them among the gentry, by whom they are kept for ornament. The nests are discovered by the old birds being observed on their way to the chosen burrows, whence the eggs are procured by being dug out. A sergeant employed on the Ordnance Survey informed me that he had killed several male birds here, chiefly in the breeding season, when it was very easy to obtain shots at them, owing to their flying after his dog in the manner of the lapwing, and not minding himself. He stated, indeed, that at all seasons, and over the land, as well as about the edge of the water, they thus flew after his dog:—the greatest depth at which he had found their nests within the burrows was six feet. Similar localities are thus resorted to on all sides of the coast. In the south, there was one near Youghal;* and the birds still breed in the rabbit-holes at Inch and Rossbegh, on the coast of Kerry; but the numbers have much decreased of late years.†

With reference to birds that fly inland when the flowing tide covers their feeding-ground and return at the ebb, Mr. St. John

* Mr. R. Ball.

† Mr. R. Chute, 1849.

observes:—"I have remarked the same instinct in the female shelldrakes when sitting on their eggs. Although several feet underground, they know to a moment when the tide has sufficiently ebbed; and then, and only then, do they leave their nest to snatch a hasty meal on the cockles, &c., which they find on the sands."*

Belfast Bay.—So soon as the young are able to accompany their parents in their flight, shelldrakes are seen here. According to ten years' observation by a wild-fowl shooter, reported to me in September 1838, they appear regularly in August. In that year, one was seen at the end of the third week; about the last day of the month, ten; and two or three days afterwards three more joined the party: they frequented one part of the Antrim shore, about a mile from the town, for about a week, and a limited portion of the opposite coast for a similar period;—although very wild, several of them were killed. On the 12th of August, 1844, two young birds of the year were shot. Shelldrakes habitually approach very near the beach. They are observed throughout the winter months, and occasionally until March. An old shooter has often remarked them in the bay in spring, when the other *Anatidæ* were chiefly gone. A small flock of five, of which two or three were adult males, was seen so late as the 1st of May, in 1849. They very rarely appear here in large numbers; but after severe frost and snow, about the end of February 1838, a flock consisting of not less than from seventy to eighty birds appeared; and afterwards, in similar weather, that same season, not less than 200 were remarked together. At the beginning of February 1842, a flock of fully one hundred was seen within a mile and half of the town: on this occasion, as well as for some time before and afterwards, the weather was mild. All such flocks are, I consider, on migration to their breeding quarters in more northern latitudes. Such, too, is Mr. Selby's opinion with regard to still larger flocks which visit the Northumbrian coast in early spring.†

* 'Tour in Sutherland,' vol. ii. p. 53. † Vol. ii. p. 290.

On examination of the gizzards of nine birds killed in Belfast Bay, Strangford Lough, and Dundrum Bay, in winter weather of all kinds, and in the months of March, April, and July, I found them all to contain a number of minute univalve shells, in addition to which was only sand or gravel. A few of them from the two first-named localities were entirely filled with *Paludina muriatica*, Lam., a most abundant species. Although they exhibited "shell-fish" only, food of various kinds—vegetable and animal—was abundant where they were obtained. The tenth individual—shot in Belfast Bay, in February 1849, during mild weather—had its stomach wholly filled with minute mollusca, *Montacuta purpurea** (in profusion), *Skenea depressa*, and *Paludina muriatica* (few of these). Its crop was full of the two former species, chiefly of very small *Skeneæ*; it alone containing not less than nine thousand of these shell-fish. The stomach produced still more, so that 20,000 of these minute mollusca were estimated to be in the bird at the same time.† To give an idea of their size, the *Skenea* is about that of clover-seed, or one-eighteenth of an inch in diameter; the *Montacuta*, when large, is one-twelfth of an inch broad. The bird was very fat, as might be expected from such nutritious diet;—the same on which the grey mullet (*Mugil chelo*) attains a great size in this bay.

From the evident partiality of the species for such food, I had naturally imagined that it was originally called *Shell*-drake, and that *Shiel*-drake would turn out to be an unmeaning corruption. The latter term is often quoted from Willughby, though "Sheldrake" is his orthography;‡ and he tells us that "they are called Sheldrakes because they are particoloured" (p. 363). Mr. Yarrell suggests that "the term Shield-drake may have had its origin in the frequent use made of this bird in heraldry.§ Willughby's may, however, be the correct version, when we think of the red-breasted merganser and the goosander, birds

* *Mya purpurea*, Mont.

† Five hundred were reckoned by Mr. Darragh (Curator of the Belfast Museum) and myself, and the remainder carefully divided into portions of similar size.

‡ Edition 1678. § Vol. iii. p. 143.

with pied plumage like that under consideration, often bearing the name of shell-duck.

On all quarters of the coast this bird is at least occasionally met with,—is "in considerable numbers in Dingle Bay," and on the shores of Connemara, as well as elsewhere;—it is not found in North America. Very rarely is it killed in a wild state on fresh water.* It is generally considered to be bad as food; but a person of my acquaintance considers the flesh of the young bird, when just able to fly well, very good, while that of the old he regards as strong and having a heavy disagreeable smell.

Males of this species vary much in size, increasing apparently until they attain the fullest maturity. The old birds of this sex are always, from their superior bulk to the others, singled out and fired at amidst a flock, by the wild-fowl shooters in Belfast Bay;—they are sometimes as large as brent geese. The finest I have seen was one of seven birds killed here at a shot from a flock of eight. The knob at the base of the upper mandible, which is hard in winter, increases very much in spring, becoming then soft, fleshy, and filled with oily matter: at this season it is as figured by Bewick.

A fine male shelldrake kept for some years at the Falls near Belfast, was extremely attractive, owing to his brilliant plumage, light graceful walk, and rapid flight. He became so domestic as never to leave the place, though his wings were freely used in flying about it. He would take food from a person's hand, was a very bold bird, and could even master the tame swans. This he managed by alighting on their backs and buffeting them with his wings. The swans when so attacked did not attempt to retaliate, but invariably made the best of their way from the tormentor. The peculiar and quick whistling call of this bird, heard at a considerable distance, was frequently uttered. He paired with the common duck, for two or three years successively, producing a beautiful progeny. Several others which were kept here never bred, either with their own species or with the common duck,

* An immature male was shot on the river near Clonmel, January 19th, 1841.

though the males—like those mentioned by Montagu—were bold and gallant in spring, and manifested every disposition to do so. The manners of the species on such occasions are well described by Mr. Selby, who gives a full and excellent account of the bird generally. Mr. Yarrell offers a good hint to persons wishing to breed them, mentioning the method successfully adopted at the Zoological Garden, Regent's Park, London (p. 143). Colonel Hawker, too, in his 'Instructions to Young Sportsmen,' supplies some information on this bird, which he calls burrough duck, and tells the way to keep the young.*

One pair of shell-ducks out of several lately kept by Mr. Trumbull of Beechwood, Malahide, bred three years successively. The first year there were eight young, all of which were brought to maturity; the next, the whole brood was carried off the night after being hatched; the third, they were brought to as successful an issue as in the first year. The owner of these birds, observing the old ones apparently looking about for a breeding-place in a yard, made a burrow there, like that of a rabbit, and in it the nest was formed each year.†

I was told in Islay (January 1849), that the shelldrake is common and breeds there; but leaves the island (or part known to my informant) in autumn, and returns again about the last week of December. The oystercatcher is said to do the same.

THE SHOVELLER.

Blue-winged Shoveller.

Spathulea clypeata, Linn. (sp.)
Anas ,, ,,

Is a regular winter visitant to some parts of Ireland.

My notes bear witness to its presence in different localities on the Down coast, in three successive winters—1835–36–37—and again in 1839. Birds of all ages occur in fair proportion. Two, which I obtained, were killed in Belfast Bay in the winter of

* The matter is all copied into Yarrell's work. † Mr. T. W. Warren.

1829–30, but the species is not procured here regularly every season. One, shot on a pond of fresh-water near Mount Stewart, county of Down, in the middle of August 1833, came into my possession, and on the 11th of September, the same year, I saw a recently killed bird which was purchased in the inland town of Lisburn. One was shot on the fresh-water dam at Beers' Bridge, near Belfast, on the 21st of October, 1844. But nearly all the shovellers seen in this town are killed in the bay. Four, shot here, from a flock of seven, on December 15th, 1847, came under my notice immediately afterwards.* A practised wild-fowl shooter imagined, from their manner of feeding, that they were wild ducks. They did not attempt to dive until wounded and endeavouring to escape, and then dived but badly. Two of them were in the beautiful plumage of the adult male. In weight, they varied from 12½ to 15 ounces, and were all in very fine condition, so much so, that I measured the thickness of fat on one of them, and found it to be an inch on the breast. The stomachs of the five contained minute pebbles only. Yarrell describes the adult male as having the bill lead-coloured, but this organ in both birds is wholly—above and below—of a shining black; a third male, all but adult (the next spring moult would have made him so), has the bill blackish, with a reddish-brown tinge apparent, when viewed with the light upon it; the bill of the fourth, a female, is dusky-black with a reddish-brown tinge. Tarsi and toes of all four are reddish-orange, those of the female palest. Irides of all are dark, golden-yellow; those of the female the least pure in colour.

The latest period of the spring in which this species has come under my notice here, was on the 3rd of April, 1849. A splendid adult male, then shot, was accompanied by another in similar plumage, which was wounded. The specimen was 18 oz. in weight; its length 19 inches; wing, from carpus to end of quills, 9 inches; first quill of each wing longest, and not the second, as mentioned by Yarrell;—in another specimen examined, the second is the longest in the wing: the character of comparative length,

* A couple were on sale in Belfast market about three weeks previously.

therefore, is not positive. The gizzard exhibited the remains of vegetable matter. Of two other birds killed in the month of January, the gizzard of the one contained vegetable matter of different kinds; the other, only sand, gravel, and fragments of a *Littorina*. One, examined in November, was filled with the remains of vegetable matter, including a number of seeds;—in a second, looked to this month, were a number of the univalve shell, *Rissoa ulvæ*, and a full-grown *Littorina neritoides*, in addition to which were fragments of stone, as there were in all the others. The contents of one, procured in Wexford market in this month (and examined by Mr. J. Poole), were similar to those in the last bird. The shoveller has been seen on the fresh-water at Caledon, county Tyrone.

On calling, in the month of March, 1833, at two bird-preservers' in Dublin, I found that one had just received an adult male shoveller, and the other, two fresh specimens, including an old male. When in this city, in the same month of the following year, Mr. Glennon informed me that he had preserved seven or eight of these birds during the winter just then past, all of which had been taken in a decoy. Down to the present period (1850), one or two pair can, at any time during the season, be procured in a decoy in a midland county, whence the birds are sent to Dublin.

In August 1836, Mr. W. S. Wall stated, that he procured shovellers every winter in the Dublin market, and that in the preceding season, he had purchased about eight or nine: in the winter of 1837–38, several fresh specimens were brought to him on sale, the earliest on the 12th of October—in the first week of May, 1838, a recent adult male was offered to him. A few of these birds appear in Dublin Bay occasionally in winter.* An individual, shot on fresh-water in the middle of August, in the north, has already been noticed, and, on the 17th of that month, in 1846, one was sent on sale to Dublin.† These two birds, and the one just mentioned, as obtained in May, suggest that the shoveller may possibly breed in Ireland, as it does sparingly in England.

* Mr. R. J. Montgomery. † Mr. J. Watters, jun.

This bird is occasionally shot in Westmeath, and visits Wexford harbour (whence at least half-a-dozen are brought to market every winter), where it bears the name of *maiden-duck*.* At Waterford, it is called *whinyard*—a name applied to a knife and a sword of a peculiar shape, resembling the shoveller's bill in form.† One of these birds was shot in the harbour of Cork, in January, and another (adult) in April, 1846. One or two, at most, are seen in Cork market every winter, adults as frequently as young.‡ Two were shot in the winter of 1836–37, near Tralee, where a few occasionally appear,§ and the species is sometimes seen on the river Shannon. The term "whinyard" reminds me of the "whinnard" noticed in Mason's 'Statistical Account of Ireland' (vol. iii. p. 400), by the Rev. William Eastwood, in his observations on the wild-fowl of Wexford harbour. "The average prices," he remarks, "may be thus :—barnacle [brent geese], 6s.; whinnard, 3s.; wigeon, 2s. 6d.; teal, 1s. 8d.; and duck (least liked), 2s. a pair." The whinnard I presume to be the shoveller, and it is not rated comparatively too high. A friend, who has eaten of birds killed in Belfast Bay, considered them the best wild-fowl of which he ever partook; and much better than teal. They were thickly covered with fat, of a delicate flavour. Authors on both sides of the Atlantic bear testimony to the superior quality of the shoveller as an article of food. Wilson speaks of "the excellence of its flesh, which is uniformly juicy, tender, and well-tasted" (vol. iii. p. 87, Jardine's edit.). Audubon even prefers it to the canvas-back duck, so celebrated for its gastronomic virtues. The latter author gives, from personal observation, some very interesting particulars of the species, vol. iv. p. 241.

The shoveller is perhaps about equally common in England and Ireland; but much less so in Scotland than in the latter island. To Mr. Macgillivray it was even unknown there when his Manual was written (vol. ii. p. 172), and it does not appear in Mr. St. John's copious list of the birds of Sutherland.‖ Sir

* Mr. J. Poole. † Mr. R. Ball. ‡ Dr. J. R. Harvey, 1850.

§ Mr. T. F. Neligan. ‖ 'Tour in Sutherland,' vol. i. p. 140.

William Jardine has, however, generally seen one or two specimens (though where obtained is not stated) during the winter and spring in Edinburgh market, and according to the 'Historia Naturalis Orcadensis' (p. 75), published in 1848, the species is not unfrequent in Orkney.

THE WILD DUCK.

Mallard.

Anas boschas, Linn.

Is common around the coast; on fresh-water lakes, &c.; and is indigenous.

Although great numbers of these birds migrate from more northern countries to our coasts and inland waters every winter, the species breeds throughout the island wherever it can find suitable localities. At a sheet of water, about two miles from Belfast, in Belvoir Park, two or three pair annually build, and a similar number at Ballydrain Lake, four miles distant;—in 1832, the young were noted as swimming about here at the beginning of May. Numbers breed about two lakes at Hillsborough Park, at the distance of ten miles. A person visiting them on the 10th of June, 1845, saw about a dozen broods of young, the female parents of which exhibited various stratagems to induce him and the gamekeeper to follow her instead of the ducklings; if on the ground, dragging herself along it apparently by the aid of her wings alone; if at the edge of the water, rushing along the surface flapping her wings; the bill in either case being wide agape, and a loud cry kept up. The young, in the meantime, became secreted among the herbage or escaped into the water; once into which, they instantly dived, and continued doing so until they got so far out as to be inapprehensive of danger, when they formed a little flock and swam quite composedly after their parent. The keeper here believes that pike, of which there are many in one lake, consume a number of the young birds, as he has often

seen these dive but never come up again. Various instances of wild ducks building in trees are on record; thirty feet being the greatest height of the nest from the ground mentioned in the latest work on 'British Birds.' Some years ago, a nest was formed in a tree in Hillsborough Park, about forty feet from the ground, and in 1848, a magpie's nest was taken possession of as the site for another, although it was very near the top of a fine silver fir, one of the loftiest trees in the demesne, and not less than eighty to ninety feet in height. This tree, too, was at least a furlong distant from the lake or water of any kind. The nest was discovered by a boy who is in the habit of annually destroying the eggs of "winged vermin" (hawks, crows, magpies, &c.), and who ascended the tree to this one for the purpose, but, when near it, was astonished to see a wild duck instead of a magpie fly off. On examination of the nest, he found it to contain fifteen eggs. When my informant visited the place soon afterwards, the climber was sent again to the nest to see what progress had been made, and the egg-shells, broken, &c., in the peculiar manner of those from which young birds have made their exit, only remained. None of the ducklings being found on the ground around the base of the tree, it was presumed that they had all been carried by their parent in safety from their lofty birth-place. Even a wild-duck, the occupant of this nest, might be able fairly to boast, that

> "*Our* eyrie buildeth in the cedar's top,
> And dallies in the wind, and scorns the sun."

I have been credibly informed that in the demesne at Castle Coole, county of Fermanagh, a tree, selected by a wild duck for building in, was that on which a large bell, in daily requisition at particular hours, was hung: the nest was placed about fifteen or twenty feet above the ground, and the eggs were incubated for the usual period, but without success.

On the borders of Lough Neagh, great numbers of these birds breed; and some of the best haunts there were, until a few years ago—and perhaps are still—annually resorted to for the unsportsmanlike purpose of "flapper-shooting," *i. e.*, killing the young birds when nearly full grown, but before they are well able to fly.

They are not, however, so easily obtained as might be imagined, owing to their diving and concealing themselves among the dense aquatic herbage. About the wild lakes of Donegal and Connaught I have often come unawares upon wild ducks in their breeding-haunts. It is unnecessary to specify localities, of which there are some in every county in the island. Mr. R. Davis, jun., observes (1842) that "Wild ducks seem to admire thick furze-covers as nesting-places. A fox-cover near Clonmel is frequently resorted to for this purpose. They sometimes build on the tops of old walls covered with herbage—brambles, &c."

The first time I rode through the finely wooded and watered Shane's Castle Park, on the borders of Lough Neagh, in the month of January, now many years ago, I, with surprise, remarked that of the immense numbers of these birds which arose into the air, a duck and drake almost invariably sprang together, or soon joined in flight, thus giving indication of their being already paired. In the month of December, too, I think that I have observed them paired in that park, but have no positive note on the subject. In the autumn, also, when they frequently betake themselves in the evening to the corn-fields in the neighbourhood of Lough Neagh to feed, they are said commonly to fly in pairs.* Mr. Waterton has since, in his 'Essays on Natural History,'† given as his opinion "that the old birds remain in pairs through the entire year, and that the young ones which had been hatched in the preceding spring choose their mates long before they depart for the Arctic regions in the following year." An observation similar to the above has been made on the other side of the Atlantic. Audubon observes: —"The mallards that remain with us during the whole year, and breed on the banks of the Mississippi, or Lake Michigan, or in the beautiful meadows that here and there border the Schuylkil in Pennsylvania, begin to pair in the very heart of winter."‡ This author gives a full and interesting history of the mallard, but to

* On such occasions they are shot by fowlers, who not only conceal themselves behind the fences, but *within* the stooks of corn.

† Vol. i. p. 200, 3rd edition.

‡ Vol. iii. p. 67.

one paragraph I must make exception. I allude to that at p. 168, where, in the imaginative strain of Buffon, the "*unnatural* barbarism" of a male is protested against as caring nothing for his progeny. Surely it is, instead, *natural*, and agreeable to the instinct with which the bird has been endowed, that the male leaves the whole charge of the young to the female. As a difference of opinion has existed on this subject, it may be stated, in the words of Mr. Selby, that "the care of the young devolves entirely upon the duck, and is not partaken by the male as Wilson and others appear to think; and this fact," he observes, "I have had frequent opportunities of verifying" (p. 308). According to the observation of Mr. Wm. Sinclaire, at his pond at the Falls, where several of this species were always kept, the mallards never sat upon the eggs, and were not only pugnaciously disposed towards each other in spring, but annoyed the ducks by their pertinacious pursuit, sometimes even causing them to leave their nests. A nest here, in 1845, was made on the ground in an open meadow, and contained eleven eggs. On being visited several times in the absence of the duck, the eggs were always concealed from view, by having been covered over with mosses.

A gentleman informs me that once when in Kensington Gardens, London, he had seen a person throw a stone at a brood of wild ducks that wounded one of them, when, to his surprise, the mother, on perceiving her young one hurt, rushed at and pecked it so violently as in a few minutes to deprive it of life. He saw an almost similar instance in St. James's Park, but the young was able to make a better fight, and when attacked by its mother, it, after a slight struggle, succeeded in freeing itself. A trivial incident of an opposite kind was thus noticed in Mr. Templeton's journal:—*August* 21, 1819. I was delighted, to-day, with seeing an instance of thought and affection in a duck. One of her young ones having fallen on its back in a dish of meat, the mother uttered a scream and ran to its assistance, and lifting it gently in her bill, placed it on its feet." In the amiable light of a peacemaker—as separating two fighting redbreasts—a duck will be found noticed in the first volume of this work (p. 166).

Mr. Selby, who gives a full and good account of the species under consideration, has remarked that, "in a natural state, wild ducks always pair, though in a state of domestication they are observed to be polygamous. This pairing takes place towards the end of February or beginning of March, and they continue associated till the female begins to sit, when the male desérts her, joining others of his own sex similarly situated; so that it is usual to see the mallards, after May, in small flocks by themselves" (p. 307). This subject has been touched on in Mc Skimmin's 'History of Carrickfergus.' It is there said of wild ducks:— "Often shot during winter at Loughmorne; and until a few years ago some pairs bred in the most remote bogs of this parish. Their eggs have been hatched under hens, and the young thus domesticated; but they have been observed to be always shy, and easily alarmed on the least noise; and in the spring, the drake has been remarked to attach himself wholly to one duck for that season." With respect to the "wild" habits of the young birds, I may state that, although of correct general application, it is not universal. Large broods of young wild ducks, captured when half grown, about Lough Neagh, have become quite tame; and until spring, when they were disposed of, remained, except when taking occasional flights, with the domestic birds of their own species about the house where they were fed.

Adult birds of both sexes may occasionally be seen flocked together in summer. On the 15th June, 1833, I remarked a number of them so about Ram's Island, and the neighbouring parts of Lough Neagh; and on the 15th May, 1834, observed thirteen thus associated on the beach of this lake. On the 21st June, 1832, I met with a small number of old birds of both sexes together on an islet in Strangford Lough. Birds thus seen had probably not bred.

In winter the males sometimes keep together in immense flocks. This was particularly remarked by Mr. Wm. Sinclaire and myself in the month of January 1824, during severe frost with much snow and sleet, when they came far up Belfast Bay, close to Thomson's embankment. The water was literally covered with

multitudes of them, and "beautiful exceedingly" they looked, without a single dull-plumaged female among them.

Belfast Bay.—My few notes of the early and late appearance of the species here are:—In the middle of August 1832, a few were seen, and also at the end of the same month in 1839: on the 23rd of August, 1840, a flock of twenty-eight appeared on wing, proceeding in a southerly direction, and were supposed to be on migration. So late as April 7 (1838), a flock of about thirty was seen.* They sometimes frequent rocky islets in great numbers late in autumn and in winter: on the 7th December, 1833, in particular, I remarked them in the afternoon, between two and three o'clock (three hours before high-water), covering over such islets off Rockport. They probably resort thither as the only safe places of refuge on land, when tired of the water. They looked like *Grallatores* (see Curlew, Vol. II.) awaiting the falling of the tide and consequent uncovering of their feeding banks.† The period already noticed, when so many mallards appeared in this bay, was in very severe weather; but in the mild winters of 1843–44 and 1844–45, both ducks and mallards associated together (they do not mix much with other species) were very

* At Ballydrain lake a greater number were observed about the same date in 1849. On the 31st March, 1843, the wild ducks from the lake at Lurgan House, county of Armagh, had not betaken themselves to their breeding haunts, as numbers of them (many more than would breed there) sprang in pairs as we walked around its banks.

† "Two small islands on the south coast of the county of Wexford, called the Keroes, about a mile from the shore, are, in the winter season, the daily resort of immense flocks of *Anatidæ*. These birds lie on and around the islands during the day, and at nightfall resort to the mainland, over which they spread themselves in all suitable localities. On these flights they fly at a considerable height, and are frequently shot by fowlers, who wait for them on hill-tops which lie in their course. They arrive at the islands about the first grey of the morning, and remain in the vicinity during the day. If the weather be very fine, and the sea calm, they lie much of the day on the water and between the islands. Duck, teal, and wigeon form the bulk of these flocks. The first that arrive in the morning are most vigilant, and least easily approached. A small salt-water pond among the rocks is nearly exclusively occupied by teal, which often lie on it in numbers.

"I observed a common tame duck, while washing and cleaning its feathers, frequently sipping up a little water at intervals, as if for the purpose of assisting in the operation, possibly by diluting the fluid of its gland. When it had moistened its bill with a fresh supply of water, it took the feathers separately, and drew them through that organ, champing them diligently until it had brought them to a satisfactory condition."—*Mr. Joseph Poole.*

plentiful. Early in the winter of 1842–43, they were likewise so, and were seen coming in immense numbers every evening from some inland lakes, to feed in the bay during the night. First, a few small flocks appeared, then as many in broken parties as would cover the fourth of a square mile, and, lastly, the rear was brought up like the advanced posts, by a few small flocks. In mid-winter they disappeared; but in the severe weather beginning in February, they were again most abundant—all other species of ducks were scarce here that season. At the breaking up of a frost, it is very interesting to walk along the shores of the bay, and witness the ever-varying flights of the *Anatidæ*. Among others, little flocks of wild ducks are so restless, as to be constantly getting up from some quarter or other, and sweeping through the air.

I have remarked at the Falls ponds, how much these birds suffered from frost, after it had been very intense for a few nights, and the ground had been covered with snow. Several of them, after walking two or three yards, would sit down, and, evidently from the coldness of their legs and feet, draw them up into their plumage. When warmed in this way, they would start again on foot, but not go farther than before without sitting down and playing a similar part: I witnessed this frequently, and, though pitying the poor ducks, could not but be amused at the very slow progress which they made. Birds wholly wild, would probably have taken flight instead of walking. Those alluded to, which had the use of their wings, were content to remain on the ponds (some of which are small) during the day, but in the evening often flew to the neighbouring feeding-grounds of the wild individuals of their species, where they were sometimes killed by fowlers.

I had annually, at the Falls, the opportunity of observing the singular change of plumage which takes place in the mallard early in summer, when, losing his brilliant colours and markings, he becomes similar in garb to the duck. This change, which has long been known to take place, is very particularly and agreeably described by Mr. Waterton. Not only the mallard,

but the old male wigeon and male pintails here changed in like manner, yielding up all the beautiful characteristic colours and markings of their sex (except that the white patch on the wigeon's wing remained unchanged), to assume the dull hue of the females of their respective species, from which they differed only in the colours being of a darker shade—at the ordinary autumnal moult they all again assumed their proper male attire. Towards the end of May, the mallards' masque commenced; and by the middle or end of September, they were themselves again.

Having frequently mentioned *Anatidæ* kept on the ponds at the Falls, near Belfast, by Mr. Sinclaire, it may be desirable to notice all the species which were there at one period; viz.:—

Bewick's swan.
Brent goose.
Bernacle.
Mallard.
Shelldrake.
Wigeon.
Teal.
Scaup.
Tufted duck.
Pochard.
Summer duck of North America, *Dendronessa sponsa*.

The above were kept on an enclosed pond. There were at large the

Tame swan.
Canada goose.
Egyptian goose.

Once, when walking round the aquatic menagerie in the middle of June, I remarked that nearly all the plants of *Equisetum fluviatile* or *Telmateia* (of which there were many) had been divested of their branches by these birds, though, excepting grass, they had not eaten of any other of the numerous plants growing within the enclosure.

The following is extracted from the journal of the late Mr. Templeton:—

"In the spring of 1807, I received, from John Sinclaire, Esq.,

a duck, the third remove from a wild one, which had been carried in a basket from the Falls, two miles from Belfast, to his house in town. Its wing was either pulled or cut, on being turned into his town-yard, where it was kept for four or five weeks. He then sent it to my residence in Malone, two miles from Belfast in a different direction. It remained there, frequenting a pond in my garden, for about three weeks, when it disappeared. On going to Belfast, I found, by Mr. Sinclaire, that it had gone home to his dam whence it had been brought." *

Wild ducks rarely collect into dense flocks, like brent geese or wigeon; they are more scattered, and hence do not offer such tempting shots. They—and teal also—differ from those birds and from other wild-fowl by suddenly bounding from the water right into the air, without giving any warning to the shooter; whereas, the others swim a little off, or give some indication that they are about to rise. They continue numerous as ever—at least, as for forty years past—in Belfast Bay, visiting it chiefly at night, though brent geese, wigeon, and teal have become much diminished. In Dublin, too, I learned, in December 1849, that they are as abundant as ever in the decoys, &c., whence the market of that city is supplied. They are very highly esteemed for the table. In Belfast, the shooters usually get from 1s. 3d. to 1s. 6d. each for them, from the dealers, which is twice as much as they do for pochards or scaup ducks.

In Belfast, the common species of *Anatidæ* are generally preferred as food in the following order:—Wild duck, teal, wigeon, brent goose, pochard; the scaup is not very saleable—the tufted duck and golden-eye still less so.† The pintail, of which very few are obtained, is considered of equal value with the wigeon; and the shoveller, still more rare, does not yield to any species in the fine flavour of its flesh.

* *Aug.* 3, 1810.—This was communicated to Mrs. Priscilla Wakefield, for her 'Anecdotes of Animals.'

† I have known the golden-eye brought to table at the end of March, when, though not too long kept, its smell was so strong and disagreeable, that it had to be sent out of the room.

The food contained in wild ducks, killed in the north of Ireland, and examined by me, was almost invariably, in mild weather, of a vegetable nature. In addition to this, the birds procured during frost in Belfast Bay included, or sometimes were exclusively filled with, minute shells, of several species, but especially the *Rissoa ulvæ*. Of two shot here (February 1848), just after arrival from fresh water one had in its bill a horse-leech (*Hirudo sanguisuga*)—the other ejected several of them. The stomach of an omnivorous mallard, killed at Larne Lough in October 1848, and brought to me by Mr. Darragh, curator and taxidermist to the Belfast Museum, contained the following:—An eel, four inches in length; a crab (*Carcinas mœnas*), an inch broad across the carapace, or shell, and perfect; of marine univalve and bivalve shell-fish, 1 *Lacuna quadrifasciata*, 2 *Rissoa interrupta*, 4 *Rissoa albella*?, 5 *Modiola discrepans* (fry), about 20 of the young of *Littorina vulgaris* and *L. retusa*, 40 *Montacuta* (*Mya*) *purpurea*, 391 *Bulla obtusa*, and 475 *Rissoa alba*: it contained also above 4,500 of the handsomely sculptured seeds of the grass-wrack, *Zostera marina*; nor was this all, as fully one-tenth of the matter—that which adhered to the coats of the stomach—was not taken into account.

Montagu, in the Supplement to his 'Ornithological Dictionary,' remarks, under "Cuckow," that:—"There are some insects and worms that appear to be rejected by most birds. The thrush most greedily devours the *limax* of the *Helix nemoralis*, but will not eat a naked *limax*; this is left for the duck, which is almost the only bird that will swallow this slimy morsel." But, the Hon. and Rev. William Herbert, in one of his many interesting notes to White's 'Selborne,'* observes:—"I have in vain flattered myself that ducks would deliver the garden from this nuisance [slugs], and have never found that they would touch them." In the north of Ireland tame ducks eat slugs most greedily, and are commonly turned into gardens for the purpose of destroying them. I have, myself, very frequently observed

* Bennett's edition, p. 443.

them so engaged in various places. The Curator of the Royal Botanic Garden, Belfast, informs me that they eat of them so voraciously there as to become surfeited, and to be obliged to sit down and rest, apparently sick from being overgorged. Another observant person has often known ducks to be "all but choked" from the quantity of slugs they had eaten, so that their owners, believing them to be at the point of death, killed them, that the birds might not be lost as food. *Limax agrestis*, the chief destroyer of the vegetation of the garden, &c., is their chief prey. So well is their feeding on slugs established here, that there are some persons who refuse to eat of these birds on account of the foul diet (as they consider) on which they have fattened.

When proceeding from Utrecht to Gorcum, on the 2nd June, 1826, I was surprised to observe among the reeds, in the wild fens, numerous long narrow hampers, like those used in the north of Ireland to pack potatoes in for exportation, and, on inquiry, learned that they were placed there for wild ducks to breed in, so that the young brood might be secured before they were able to fly.

This species is fully as plentiful in Ireland as in England. If the observations of Sir William Jardine* and Mr. Macgillivray, respecting the numbers seen in winter, apply to Scotland, the wild duck is more abundant during that season in Ireland than it is there. One eloquent paragraph from Wilson must be here given. He remarks:—"This is the original stock of the common domesticated duck, reclaimed, time immemorial, from a state of nature, and now become so serviceable to man. In many individuals, the general garb of the tame drake seems to have undergone little or no alteration; but the stamp of slavery is strongly imprinted in his dull indifferent eye and grovelling gait, while the lofty look, long tapering neck, and sprightly action of the former, bespeak his native spirit and independence."†

* 'British Birds,' vol. iv. p. 109.

† 'Amer. Ornit.,' vol. iii. p. 141. Jardine's edit.

THE GADWALL.

Anas strepera, Linn.

Is of rare occurrence in Ireland.

The first individual recorded* is one which I saw in March 1833, in the collection of Dr. R. Graves of Dublin, who informed me that it was shot at Wexford, and sent to him thence in a recent state, in the winter just then past. When in Dublin in May 1838, I was told by Mr. Glennon that two gadwalls, which were brought to him, had been shot on the coast of Malahide a few miles distant on the 24th of January preceding, and that, early in the month of March, a bird of this species was sent to him for preservation by Sir Richard Levinge, Bart., of Knockdrin Castle, Westmeath. I subsequently learned from this gentleman that the specimen was shot at that inland locality. Mr. W. S. Wall (bird-preserver) received a young male, killed in the same winter at Baldoyle, and purchased another (a female) in the market of the metropolis:—it will be recollected that the winter of 1837–38 was particularly productive of the *Anatidæ*.

In a paper read before the Dublin Natural History Society on the 4th of December 1840, Mr. H. H. Dombrain mentioned his having procured a fine male gadwall, which had been shot at Malahide in the preceding week. Male and female specimens, presented to that society in 1841 or 1842, by Mr. Massey, of the Pigeon-house Fort, are believed to have been obtained in the Bay of Dublin. I have seen a bird of this species in the collection of Mr. J. Watters, jun., of that city, by whom I am assured that he saw two fresh specimens, male and female, in the market there on the 8th of December, 1846, and an immature bird about the 18th of that month in 1849; also, that he has seen at least one on sale by wild-fowl dealers in the course of every winter for some years past: all of which were killed in Ireland.†

* Proceedings Zool. Soc. 1834, p. 30.

† This singularly agrees with what is said of the gadwall in the east of England. The Rev. Mr. Lubbock informs us that it "is generally to be seen in Norwich market once or twice in the winter."—'Fauna of Norfolk,' p. 119.

A young male gadwall was shot in Beaulieu pond, near Drogheda, on the 5th of March, 1849, by R. J. Montgomery, Esq., a week before which time there was a gale from the east, and, immediately afterwards, another gale from that quarter, accompanied by snow. This bird is said to have emitted a very strong and peculiar odour, which was communicated to the hands of the person touching it, and was equally strong from the time that it was picked up until sent to be preserved two days afterwards. The same gentleman sent a female or young male from Drogheda to Dublin to be preserved, on the 21st of January, 1850.* A young male was shot about the 3rd of this month in a bog near Blarney, county of Cork.†

A male gadwall, partially exhibiting adult plumage, was shot by Mr. Francis Rankin in a snipe bog, nearly a quarter of a mile from the sea, in the Ards, near Kirkcubbin, county Down, about Christmas 1847. Only the one appeared; it was liberally presented by that gentleman to the Belfast Museum.

The gadwall is considered a rare bird in England, and is not positively known to Sir William Jardine or Mr. Macgillivray to have occurred in Scotland, but, at Sanday, one of the Orkney Islands,‡ it was lately stated that a gadwall occasionally appears. The British Islands, generally, lie too far west to be much visited by the species.

THE PINTAIL.

Anas acuta, Linn.

Is a regular winter visitant, in small numbers, to our coast and inland waters.

Belfast Bay.—Some two or three of these birds are almost sure to be obtained here every month of September.§ The earliest

* I have since learned that this bird was killed at the inland locality of Elphin, county Roscommon.

† Dr. J. R. Harvey.

‡ Hist. Nat. Orcad. p. 75.

§ From Lough Foyle, county of Londonderry, I have likewise seen them in September, and occasionally during the winter.

known to me were a couple shot on the 2nd of that month, in 1842. Adult as well as young birds are killed at this season; and of the former there seems, relatively to the immature, a larger proportion than in any other species of the *Anatidæ*. From the circumstance of pintails being chiefly shot in the latter half of the month of September, and early in October, I have been disposed to consider them on migration, in little families; five, six, or seven birds being the most that are usually seen together. On the 7th October, 1844, six of them and a wild duck were killed at a shot from a swivel-gun;—the whole flock annihilated at one fell swoop. After this time, chiefly single birds, and these rarely, are killed;—generally in company with wigeon. The name commonly applied to them by the wild-fowl shooters is pintail wigeon. Severe weather seems to have no effect in increasing their numbers. The latest period at which I have known them here was the 3rd of April (1848). The food contained in the stomachs of three individuals from this locality, killed in January and February of different years, was:—In the first, portions of *Zostera marina*; in the second and third, the remains of soft vegetable matter, with the addition, in one, of a few of the small univalve shell, *Rissoa ulvæ*; in both were fragments of stone, and, in the third, sand. Seeds and other vegetable food were found in a bird killed on fresh water, at Lough Neagh. The pintail is considered a very good bird for the table.

Audubon remarks, that the pintail is "scarcely nocturnal." I once knew it to be shot on wing at the evening "flying-time" of wild-fowl, at "the bog-meadows," Belfast. A couple were killed by Sir Wm. Jardine, feeding at dusk in some wet stubble in company with mallard and teal.

The pintail is pretty generally—though very sparingly in numbers—distributed over the fresh-water lakes, large and small, of this island. From Lough Neagh, and its little adjunct, Lough Beg, it has been brought to me. About Tandragee (Armagh) it has been shot. A few were taken every winter in the decoy at Mountainstown, county Meath, the residence of the late Arthur

Pollock, Esq., and they can still be had at any time during that season, but more particularly in (and after) the month of January, from decoys, which supply Dublin market. Three or four couple are taken during the winter in the decoy at Caledon. On Lough Derg, on the river Shannon, near Portumna, about five or six are generally killed every season. Daniel, in his 'Rural Sports,' tells us that, in the month of February only, these birds are found in great abundance in Connaught;* but in that finely watered province they are, instead, met with frequently throughout the entire season.

The author of 'The Wild Sports of the West' remarks, "When winter is coming on, the pintail was noticed in the estuary." To the bays of Kerry this bird is a regular winter visitant, and has been noticed in the market of Tralee at the end of October and first two weeks of November (1848).† In the harbours, &c., of the southern line of coast comprising those of the counties Cork, Waterford and Wexford—in which last it is called *harlan*—as well as those on the other three sides of the island, the pintail annually appears, and it seems to be in about equal numbers from north to south; sparing as these are, they have not diminished of late years like those of various other species.

In Dublin, this bird bears the name of *lady-duck*; owing, we may presume, to its graceful and elegant appearance; it was particularly numerous in the market there in the great *Anatidæ* winter of 1837–38. On the coast at Malahide, they occurred in large flocks, in the winter of 1849–50.‡

A couple of male birds (young of the year), slightly wounded in the wing, were purchased for the pond at the Falls, where they frequently came under my notice.

One of them lived for thirteen years, when it was killed by a mischievous boy; the other had been previously given away. They were very mild in disposition, and became at once quite tame. A female bird was introduced soon after the males, and one of them associated with her. They seemed duly paired,

* Vol. iii. p. 273. † Mr. R. Chute. ‡ Mr. R. J. Montgomery.

and "the season of courtship" was indicated, as described by Montagu, in the supplement to his 'Ornithological Dictionary;' but no eggs were produced. Their ordinary call-note is a peculiar brief whistle, somewhat resembling that of the teal. The shooters state that the cry of the pintail, when wounded and pursued, is like that of the mallard, or duck, though more weak, and that they quack much at such times.

The pintail seems to be about equally common in Ireland as in England, and more so in both countries than in Scotland. In "the western islands and northern coasts" of the last-named country the long-tailed duck is believed by Mr. Selby to have been mistaken for it by those who have recorded the frequency of the species. Mr. Macgillivray remarks, that this bird is not met with in the northern islands;* but in the most recent work upon them it has been noticed as a winter visitant to Orkney;†—in Sutherlandshire, likewise, it is said to be so, and is enumerated among the wild-fowl frequenting the lochs of Spynie, &c., Morayshire, in March.‡

Wilson (vol. iii. p. 95) and Audubon (vol. iii. p. 214) both speak of the pintail as seldom frequenting the sea-coast of America, and consider it rather an inhabitant of fresh-water: the latter author gives a full and interesting account of its habits.§ A friend, writing from Belvoir Cottage, West Hoboken (New Jersey), in March 1850, inquires, "Why is the pintail omitted, as a species of this continent, in the Prince of Canino's 'Comparative Catalogue of the Birds of Europe and North America'?" He adds, "It is quite common here, and always to be seen, during the season, in New York market." In Wilson's 'American Ornithology,' it is stated to be common, which leads to the inference that the omission alluded to was accidental.

* 'Manual Brit. Birds,' vol. ii. p. 170 (1846).

† 'Hist. Nat. Orcad.,' p. 76 (1848).

‡ St. John's 'Tour in Sutherlandshire,' vol. i. pp. 139 and 195.

§ Wilson erroneously remarks, that "*great flocks* of them are sometimes spread along the isles and shores of Scotland and Ireland, and on the interior lakes of both these countries."

The Bimaculated Duck, or Teal (*Anas bimaculata*, Penn.; *Anas glocitans*, Gmel.), unknown in Ireland, has on three occasions, from 1771 to the present period, been procured in England, on one of which, two individuals were captured in a decoy at the same time. In the third instance, the bird was merely purchased in the London market, and no information given where it was killed. The bimaculated duck has not been obtained on the mainland of Scotland, but is *believed* to have "been twice observed in Orkney."* It inhabits Northern Asia, but is very little known to ornithologists.

THE GARGANEY.

Summer Teal.

Anas querquedula, Linn.
„ *circia*, „

Is of very rare occurrence in Ireland.

I have, myself, seen but one specimen of this very handsomely marked duck properly authenticated as killed in this island; it is an adult male, which was shot about the month of April 1841, at Edenderry, King's-county, and is in the collection of Dr. C. Farran, of Dublin. Mr. Glennon, bird-preserver, of this city, told me in May 1838, of a fresh specimen having been sent to him in the winter of 1835–36, by Sir Richard Levinge, Bart., at whose seat, in Westmeath, it was said to have been shot. An adult male bird, which I saw in Glennon's in August 1843, was stated to have been received in a fresh state, but where obtained was unknown. Mr. R. Ball has observed a very few fresh specimens (which it may be fairly presumed were killed in Ireland) on sale in Dublin, but is not aware where they were procured. Dr. Harvey, of Cork, has seen one individual (an adult male) which was killed in that county. On the first three days of March 1847, Richard Flack, a wild-fowl shooter, to whom the garganey is well known, saw one of these birds, and, as was presumed, the same individual each day, on Strangford Lough. It admitted

* 'Hist. Nat. Orcad.,' p. 76 (1848).

of a very close approach, and seemed to have no apprehension of danger; but its observer, being in every instance in pursuit of large flocks of wild-fowl, was unwilling to lose his chance of a shot at them, by firing at a single bird, although that was a garganey. His description of the markings on the head, &c., showed it to have been an adult male. In Tighe's 'Kilkenny,' the following observation is made:—"*Anas querquedula*, a bird which goes by various English names, as garganey, easterling, lady-fowl, and on the Nore is sometimes very improperly called diver, and even wigeon, appears in winter, sometimes in small flocks, sometimes alone; the female, which is nearly brown, without any of the beautiful plumage of the male, is described by Ray under the name of *Phascas*," p. 156. It is difficult to know what species is meant in this extract, which I have thought proper to give, lest I be accused of having passed over information on the subject of the bird under consideration. Certainly the first two names used pertain to it; but "easterling" is applied both to the smew (Montagu) and wigeon (Yarrell); the pintail is often called "lady-fowl" in Dublin and the south of Ireland; and Ray's "*Phascas*" is the wigeon.

A few pair of the garganey have been known to breed in Norfolk, but it is considered a rare bird in England, and is regarded by Mr. Selby and Sir William Jardine as visiting that country at "the period of its migratory flight towards its summer or breeding quarters."* These range so far north as Sweden, although the species breeds in the countries of southern as well as of central Europe. The latter author considers that "the southern half of England is the boundary of its northern range, except in accidental instances." One record only of this bird's occurrence in Scotland—when six were killed in Stirlingshire, in March 1841—appears in his work and that of Macgillivray. It is subsequently stated to have been met with in the Orkney Islands.†

* Mr. Knox informs us that immature birds are not unusual in the winter on the coast of Sussex, but adult specimens, particularly males, are rare (p. 237).

† 'Hist. Nat. Orcad.' p. 77.

THE TEAL.

Anas crecca, Linn.

Is common around the coast and on inland waters, and is to a considerable extent indigenous.

Belfast Bay.—Small flocks, containing at most about forty birds, have generally appeared here so early as the month of August, from which period, until the end of November, they generally remained, and afterwards were seldom seen, except when the inland lakes became frozen over; under such circumstances they have been abundant in the months of January and February: in March they have been sometimes obtained. These birds have very much diminished in numbers during the last twenty years; the wild-fowl shooters considering that there is not now (winter of 1849–50*) above one teal here for every fifty or sixty previous to that time. From 400 to 500 birds were frequently then seen in a flock, during frost, and occasionally many more, when they appeared alighting, and covering over masses of floating ice in numbers like the common grallatorial birds. During snow-storms, especially, but at other times also, they were frequently killed on the water, by being fired at from behind the ditch-banks near the margin of the bay; and often in company with wigeon. Part of one winter, within the period named —that of 1837–38—they were plentiful; and about fifty were obtained by the discharge of a swivel-gun. In another instance, thirty-two were procured at a shot. The female birds, when wounded, are said to quack like the duck, but in a much weaker tone.

The diminution of teal, alluded to in Belfast Bay, might be attributable to the increased quantity of shipping and steam-vessels,—a great extent of their feeding-ground being enclosed within railway embankments, and constant persecution by the wild-fowl shooters having swivel-guns, although their numbers

* About a hundred in a flock were seen this winter during severe frost.

were not affected elsewhere. But the decrease is only too general. Dublin market is much less numerously supplied from decoys and otherwise than formerly. A fine decoy, exclusively for teal, at Mountainstown, near Navan, county Meath, in which immense quantities were taken, has, for many years past, ceased to be worked. Its proprietor remarked, in 1845, that "the country has been so drained and improved, that all kinds of wild-fowl are now very scarce, and a decoy is among the things we read of, rather than see."

On looking to the contents of the stomachs of twenty-seven teal, killed in the north of Ireland at various times, from late in autumn until the beginning of spring, I have ascertained that they feed chiefly on the seeds of aquatic plants of various kinds—among others, of rushes, duck-weed (*Lemna*), &c.—also, on other vegetable matter, and occasionally on insect larvæ: a quantity of sand and gravel likewise is taken into the stomach. One bird, killed in February, near Donaghadee, contained six of the remarkable-looking rat-tailed larvæ of *Elophilus tenax*, Latr., which were quite fresh, so that they must have been taken alive, or very soon after death; some husks, together with several grains of flax-seed, were also included. Audubon has remarked of the green-winged teal of America, which he considers the same as the European species, "that being more select, or confined to vegetable food, than most other ducks, their flesh is delicious."

Sir William Jardine is of opinion, that there is no migration of teal to the south of Scotland; but, to the shores and fresh-waters of Ireland, I feel satisfied that there must be, or, in other words, that the numbers which appear in winter cannot have been all bred in the island. The birds generally inhabiting marine localities, as well as a proportion of those living on inland lakes, &c., are, probably, from higher latitudes.

They breed in suitable localities, in all parts of Ireland, that are sufficiently retired, often in those resorted to for the same purpose by wild ducks. A few of these in the county of Antrim, and not far from Belfast, may be mentioned:—Lough Morne, near Carrickfergus (according to Mc Skimmin, some years ago);—Dro-

medaragh, where, in the middle of July 1833, a relative was shown a nest, in boggy ground, on the summit of a high hill, and about a quarter of a mile from water: it contained at least a dozen of eggs, which were quite concealed from view, by being covered over with feathers;—Lough Beg, adjoining Lough Neagh (on the eastern side), whither an acquaintance was accustomed to go in the season, for the purpose of shooting young wild-ducks, or "flappers," and young teal;—Springmount, near Clough, where some annually breed. About Baldoyle, near Dublin, teal and wild ducks are said to nidify;—also* in the county of Wexford; at Anagh bog, between Cork and Bandon (in 1849);† in the county of Kerry,‡ on the islands of the Connemara lakes, where the young are described as "fierce little things," following the canoe of the person who was observing them.§ On the 11th of June, 1842, a couple of young teal, "nearly fledged, except the wings," were sent, from the Bog of Allen, to Mr. R. Davis, jun. (of Clonmel), who remarks, that on their being placed in a large vessel of water, they dived with surprising swiftness whenever he approached, and seemed, from their diving incessantly and remaining down a long time, as much at home beneath the surface, as little grebes or dabchicks (*Podiceps minor*).‖ Teal, to the number of at least twenty pair, are considered, by the decoy-man, to breed in the demesne at Caledon.

The teal is naturally the least wild of any of our *Anatidæ*, though it soon learns to beware of its enemy, Man: in localities of all kinds, where a little water, or sometimes even moisture, prevails, we occasionally come close upon this beautiful little duck. I was once much interested with three teal that came to a pond at Wolf-hill. They were old birds (a male and two females), and, being at first somewhat wild, evinced that they had learned the evil of man's ways towards their kind. By making very gradual approaches—almost from day to day—towards them, taking care

* Mr. R. J. Montgomery.

† Mr. Robert Warren, jun.

‡ The late T. F. Neligan (1837).

§ Mr. W. M'Calla.

‖ When at the Island of Islay, in January 1849, I learned that the teal breeds commonly there.

never to cause alarm, they soon learned that they were in a place of safety, and eventually admitted of a close approach without taking wing. As a gun was not permitted to be fired on the grounds, they were always to be seen during the day for about six weeks. But, unluckily, trusting themselves outside the place, though only at a few yards' distance, they fell a sacrifice, which I learned by my next neighbour boasting what a fine shot his son had made that morning, killing two teal on the water with his first barrel, and a third, as it rose, with his second one;—a lamentable result, caused by my having taught the poor birds that they might trust to man. I have known several instances of a similar kind with respect to other birds.

Teal remain congregated late in the season. On March the 31st, 1843, I saw immense numbers on and about the lake at Lurgan House, county of Armagh. They rose in very large flocks, and, during the forty minutes occupied in walking round the lake, their cries were as incessant as the cawing at a rookery in the breeding season. A lady of our party remarked, that they are so abundant here in winter, and so many flocks are on wing at the same time, that their numbers and constant crossing of each other have often reminded her of the figure of a Scotch reel. In the first week of April, 1849, small flocks were seen on Ballydrain lake.

That locality, where they are protected, is a favourite haunt of teal during the day in autumn and winter. By night, which is their feeding-time, they are all scattered far abroad. In my mind, this splendid little duck—the smallest of European *Anatidæ*—is associated with the beautiful in winter scenery, with the variously-hued wooded banks of the lake or river, lowly bordered with pale yellow reeds, green rushes, grey willows, or all combined. In the bare flooded bog or brickfield*—for any little plashy spot attracts it—I have thought nothing comparatively of the teal as, when it rose on wing, and added to an already

* Not only a few birds, but a flock of a dozen or more, have come under my notice in the old brick-fields close to Belfast, on the western side.

highly finished picture a graceful element of life. Its sight is amazingly acute. On my quietly advancing to the banks of this lake, at a great distance from a large flock, they would, when first seen, be reposing on the water in silence; but the next moment, having perceived me, would commence calling in a manner grating to the ear, and nearly resembling the sound produced by the solid wooden wheel of an old-fashioned Irish car wanting grease. They would then lightly spring into the air, wheel through it with amazing rapidity, within a few seconds of time, appearing backed by the transparent medium of the water of the farther part of the lake, by the "evergreen pine," or mass of towering silver firs, by the soft golden floating clouds, or sweeping before extensive ranges or broken groups of majestic deciduous trees; their colour appearing different every moment as they were "relieved" by these different objects, the greatest contrast being when they seemed all dark in hue, with the upper surface of their bodies turned towards me, or shone like silver in the sunlight when the white under plumage was exposed. So rapid are their movements, that it requires an effort—almost a straining—of the eye to follow them. Being intent on alighting, they will now from on high repeatedly sweep down towards the water, into which some individuals from the flock descend at every circuit until the whole are gradually reposing on a more distant part of the lake, where their call, occasionally unheard during their more distant flight, is again distinctly given forth.

Audubon, in the third volume of his work (p. 219), gives an admirable description, as a sportsman, of the habits of the green-winged teal of America, now considered distinct from the European species. Wilson's observation, that the blue-winged teal (*Anas discors*, Cuv.) "is the first of its tribe that returns to us in the autumn from its breeding-place in the north," and that "they fly rapidly, and, when they alight, drop down suddenly, like the the snipe or woodcock, among the reeds or on the mud," applies equally to our native species, as indeed do the general habits attributed to that bird.*

* 'Amer. Orn.' vol. iii. p. 97. Jardine's edit.

THE WIGEON.

Anas penelope, Linn.

Frequents the marine loughs, &c., in great numbers for above six months of the year.

Arrival and Departure.—Its first appearance in Belfast Bay, after the breeding season, is generally in the month of August. In several consecutive years it was thus observed :—August 21, 1840, four arrived—September 9, 1841, about thirty—August 29, 1842, wigeon and teal killed in company—August 23, 1843, an adult male, and on the 25th, three others obtained—August 30, 1844, a few seen—August 27, 1845, wigeon re-appeared, as well as brent geese—August 27, 1847, two wigeon shot; teal and wild ducks have been here for some time :—on the 11th of September, 1847, such large flocks of wigeon and teal were seen as to induce two wild-fowl shooters to give up their summer avocation (at which they earn from 10s. to 12s. per week) and commence the winter campaign ;—August 23, 1848, a couple of wigeon killed. They gradually increase in numbers from the period of arrival. On the 1st September, 1839, a fowler observed a flock of about twenty; on the 10th, he, with the aid of a telescope, reckoned seventy-five in a flock; and, a day or two afterwards, saw not less than a hundred together ;—from this time to the end of the month great numbers arrived. The adult males are rarely seen or shot before November. The oldest shooter in the bay considers that wigeon are the first of the migratory wild-fowl (not including ducks and teal) to appear here after the breeding season, and the earliest to depart in spring; and that, by the end of March, they are nearly all gone. Other fowlers agree that they are the first to leave in spring ; and, though some remain considerably later than the end of February, that the great mass then take their departure. On the 16th of April, 1837, one was killed on Lough Neagh*; to

* Late in the season chiefly—in March, &c.—I have seen wigeon brought from this locality. On the 31st March, 1843, I saw large flocks on the lake in the demesne of Lurgan House (county of Armagh) ; where the old males, admitting of a near approach, looked very beautiful.

the end of which month in the same year many remained in Belfast Bay. In 1838, some also continued there until a late period, as did a number of other migratory species of birds, in consequence of a prevalence of east and north-east winds;—on the 23rd of April a flock of about forty was seen.

The decoy-man at Caledon saw an old pair of wigeon frequently there in the summer of 1849; and, very early in the autumn, remarked that they were accompanied by three others, which he imagined might be their young. There was no marked disparity in size between the old and the supposed young, when these were first observed;—the dates were not remembered. Numbers of wild ducks and teal breed in this demesne.

Fowlers at Lough Corrib (Mayo) state, that during the time a part of the lake and the adjoining lands were strictly preserved by a proprietor, who died about two years ago, wigeon bred annually there; but as his successor has allowed shooting over the property, these birds are now only to be seen in winter.*

A fowler, who went with his swivel-gun for a week's wigeon-shooting at Strangford Lough, in 1846, reported, on his return, that either during a hurricane, which took place on the night of Tuesday the 3rd of March, or immediately after it, the wind being from the south, the great body of wigeon left the lough, probably on their northern migration, as on the four following days none but weak birds were to be seen. On the 1st of April, a flock of about two hundred was observed in Belfast Bay: when approached, they went right off northward, as was supposed, on migration;—on the 17th of this month, six adult males appeared together; on the 20th, a flock of twenty birds was noticed; and on the 22nd, a flock was heard at twilight flying towards the bay. In 1847, a flock of thirty wigeon was observed on the 22nd of April, and one of half that number, from which three were shot, on the 1st of May.† These birds gather in such dense flocks, in

* Mr. R. J. Montgomery, Feb. 1850.

† Mr. R. J. Montgomery, in a letter to me dated April 26, 1849, remarked that he had shot wigeon in Drogheda Bay about ten days previously. He had not before seen them there so late in the season. The adult male is called *golden-head* (a northern name for it also), the female and the young, *black wigeon*, in that bay.

spring, in the sea, off the Gobbins, northward of Belfast Bay, that in the very early morning, soon after daybreak, they have, on the calm water, been mistaken for drift-timber, and the people have gone off in their boats to obtain it. Mr. J. Watters, jun., informs me that, during the night, he hears great flocks of wild-fowl pass over the house in which he lives (in Crow-street), in the midst of the city of Dublin, particularly early in winter and spring. Between ten and eleven o'clock, on the night of the 20th March, 1850, flocks of wigeon continued to pass over for nearly three-quarters of an hour, the loud clear calls of which afforded evidence of their species. In the demesne at Caledon, I saw a flock of about a hundred birds on the 23rd of March, 1850, many of which were adult males. So late as the 12th of April, 1850, fifteen wigeon were killed at a shot from a swivel-gun on Larne Lough.

From the preceding notes it appears that the wigeon regularly comes earlier to the north of Ireland, and occasionally remains later, than on the Northumbrian coast. Mr. Selby informs us that "they usually make their first appearance in this county about the 20th day of September, in small companies, which are on the gradual increase till about the beginning of November, when the migration appears to be completed.* Early in March they again commence their polar movement, or return to summer quarters; and, by the month of April, the coast is entirely deserted" (p. 325).

Belfast Bay;—different modes of shooting in, &c.

The wigeon, where not disturbed, feeds much during the day: but it is regarded here, by the three most experienced wild-fowl shooters, two of whom have made a trade of wigeon-shooting for above twenty years, as essentially a night-feeding bird. They

* Mr. St. John remarks:—"The earliest day on which I ever killed or saw wigeon in Morayshire, was on the 8th of September, on which day I shot a brace. * * * The flock altogether consisted of eight or nine."—'Tour in Sutherland,' vol. i. p. 286.

In another place (vol. ii. p. 22) this date is mentioned as "a month before their usual time of arrival."

have all seen the species feeding by day, but consider that it is more than doubly busied by night. Often, in fine weather, flocks will float idly about during the day where food is abundant; but during the night, all is activity with them. They become restless so soon as the shades of evening begin to appear, equally on the inland lakes, where they remained undisturbed all day, as on the marine bay, where persecution was their lot. Under all circumstances, they then leave their day-haunt on flight to their night feeding-ground. The more frequent whistle of the male bird, and—as it were—answering, purring cry of the female by night, evince that the birds are then most actively alive. The fowlers often remark at such times :—"Hear them answering each other;" and judge, from the whistle being unreplied to, or its being frequently uttered and answered, whether there be few or many birds together. Some of these observations have been made in consequence of Mr. Waterton's statement, in his essay on the wigeon, that a number of these birds remain during the night on the lake at Walton Hall, in consequence, as he considers, of their feeding on grass during the day. His observations are, doubtless, critically correct as to his own locality; but, owing to the protection afforded there, we may fairly regard his wigeon as in a semi-domesticated state. Under similar circumstances, I have frequently seen wigeon grazing like geese by day. The bird wisely accommodates itself to circumstances.* It is very interesting to observe it feeding where no enemy is feared. The last place of this kind, in which wigeon came under my notice, was in retired and most picturesque little bays in the island of Islay, where no human eye but my own was upon them at the time. Being afloat, they would commence their repast when the tide had sufficiently fallen to admit of their reaching the *Zostera*, and at low water they were

* Mr. St. John, in his 'Tour in Sutherland' (vol. ii. p. 21), remarks :—"Unlike the mallard and the teal, both which are night-feeding birds, the wigeon feeds at any hour of the day or night indiscriminately." In Belfast Bay, both the mallard and teal have been observed by the three most intelligent wild-fowl shooters (who were questioned on the subject) to feed by day at all times that they are there during the season. The latter end of February and beginning of March—except during frost—is the period when they are chiefly in the bay by day. They are now all paired, though sometimes in large flocks.

left, like grallatorial birds, to regale upon the banks. Here they remained until the advancing sea raised them on its surface, and then continued to feed so long as the water was shallow enough for the purpose. When it deepened too much, they floated on its bosom, and resigned themselves to rest or sleep, "high water" being the time of their repose. On the short grass of some of the islets off Islay, they were remarked by a friend to graze by day.

It has been particularly noticed by Mr. Darragh and others, that the weaker and stronger birds keep each together in flocks during the entire season. They may even, suiting their strength of flight individually to each other, have divided into flocks before starting on migration. The weaker consist of both sexes, of all ages, but of fewer adult males than the stronger flocks. Any number, up to four or five hundred, of either kind, will be found together. Every individual shot from the weaker party is smaller and lighter, as every one killed from the stronger flock is of a larger and heavier kind. The weak and the strong resort to different feeding-grounds in Larne, Belfast, and Strangford loughs; the former keeping nearer the shore, and coming farther up the loughs, than the stronger birds. Some shooters in the two latter localities term the smaller birds *fresh-water wigeon*, from an idea that they feed chiefly inland, and only occasionally visit the sea. It cannot, however, be owing to this cause that they are inferior, as the scaup duck, which is given as much as the wigeon to division into strong and weak flocks, dwells upon the sea, very rarely, indeed, visiting fresh-water here.

Wigeon frequent Belfast Bay in such numbers that two or three persons have always earned their livelihood in the season by shooting them, brent-geese, and wild-fowl generally, as several other persons have partially done. An account of the manner in which wigeon were formerly shot here, or until within the last twenty years—when the few owners of swivel-guns have had the sport nearly all to themselves—may perhaps be interesting.

Barrels, large enough to contain the shooter and his dog, were sunk in the ooze, until their top was about two inches above its

surface; and were at various distances, not exceeding a mile, from the shore. To these the shooters resorted when the ebbing tide had left the banks sufficiently bare for their access at the usual flying-time of the birds;—from the commencement of dusk until quite dark, or, for about twenty minutes. This regular flight over, the wigeon continue feeding about where they alighted, on the watery ooze, and do not "fly" again, if the night be dark, but if moonlight, they partially fly at intervals, from one part of the feeding-ground to another, so long as the banks are uncovered by the tide. If the moon, therefore, were soon to rise after the first flight, the shooters would remain for two or three hours in their barrels. In addition to the birds which get up of their own accord, others, disposed to be quiescent, would now be raised to flight by the report of the guns, and more being thus on wing over the feeding-ground, afforded a greater number of shots. After the regular flying-time, the shooter had another chance when the flowing tide lifted the wigeon on its surface, and brought them within shot of his barrel. This, of course, was always filled with water when the shooter first went to it, so that, for the purpose of baling it out, he had to be provided with a small bucket, which, turned upside-down after that operation, served as a seat in the barrel. When properly "appointed," he was attended by a water-spaniel, who lay close at his feet in the barrel, and served to keep his lower extremities warm. A successful shot being made, the dog sallied out to pick up the victims, in doing which, practice made him wonderfully expert, and intelligence taught him to secure the wounded before lifting the dead birds. The dog took fully as much delight in the sport as his master, and looked out as anxiously for the approaching wild-fowl.

As the season advanced, the wigeon became very wary, from persecution, and sprang high into the air on coming within range of any well-marked object on the banks, such as the barrel, &c. A black hat, especially, was so easily seen by them, that the shooters were obliged to wear caps, though not more of the head than sufficed to enable them to see around, was exposed above the edge of the barrel. Wigeon, on perceiving any object

that alarms them, even when in full or rapid flight, instantly throw themselves upwards with surprising quickness. On the occasions alluded to they sometimes fly singly, but more frequently in small flocks, so many as twenty rarely appearing in company; but, in frosty weather, from two to three hundred have been seen on wing together. The males often utter their whistling note during these flights. The most I have heard of being obtained by a barrel-shooter, during the brief period of flying-time, was from fifteen to twenty wigeon, and the greatest number in a week, sixty birds. Other species of ducks were sometimes killed, and more particularly scaups, of which, when very abundant in the bay, hundreds have, late in the season, after Christmas, been seen in a flock at flying-time. On the first occasion that they were thus observed by a shooter of my acquaintance, he was so alarmed at the tempestuous rushing sound they made, as to be incapable of shooting, else he might have brought down a dozen at a shot. Pochards, too, and tufted ducks were sometimes obtained from the "barrels;" once, only, am I aware of a wild goose being brought down from them, on which occasion three of the white-fronted species flew within range, and one was killed. Wigeon, after feeding during the night, or part of it, on the banks, are in the habit of flying at earliest dawn to the water to wash themselves, and at such times, when there was not light enough for the shooter to see them, the flapping of their wings has from a distance attracted him to the spot.

Another place and time of shooting, is on some promontory or embankment jutting out into the bay, over which the wigeon fly on moonlight nights, when the rising tide puts them off their feeding-ground, and they resort to a part of the estuary where the water has not yet risen sufficiently to prevent their feeding, or betake themselves to some inland localities. At these times, the shooter, by hearing, perhaps at a distance, the most pleasing loud and lively notes of the males (*whee-o-ing*, their clear and quickly-uttered whistle is here called*) where they are con-

* The softly guttural, or *purring*, notes of the female are inaudible from a distance.

gregated, stations himself according to the direction in which he imagines they will fly, and often succeeds in getting shots as they pass overhead. But there are occasionally attractions connected with this shooting, incomparably superior to the sport itself. In a fine winter night, we behold the moon riding in majesty, the stars softly twinkling, the position of some beauteous planet marking unerringly the onward march of time since the last month, when, under similar circumstances of moon and tide, we visited the place. Driven from their marine pasture by the advancing waves, little flock after flock of wigeon will then appear between us and the pale blue sky. Others, too, of the duck tribe may chance to pass, and we are sure to hear the enlivening and loud calls of the curlew, and various other *Grallatores*, as they are impelled by the encroaching waters to leave their feeding-banks. Wigeon-shooting, under these circumstances, is now almost wholly discontinued here.

The wigeon is so much persecuted in Belfast Bay, that before the dawn of morning multitudinous numbers rise from the banks on which they have been feeding all night and betake themselves to Strangford Lough, as a place of comparative security, where they remain all day, but return at twilight to the former locality to spend the night. Some, however, constantly remain here throughout the day, the only exception to which (that I have heard of) was, that during a week's frost, commencing on the 24th of December, 1836, none were seen during the day by one of the professional shooters; but they were in abundance by night, when, at a single shot, twenty-three fell by a discharge of his swivel-gun. The same number was subsequently (January 11, 1850) procured by another person. The most of these birds killed by a third wild-fowl shooter here at any time, were eighteen by his shoulder-gun and twenty-seven by his swivel-gun. At a more fatal shot (January 20th, 1848), twenty-two wigeon, twelve wild ducks, and one teal were bagged :—a number of wounded birds escaped. In one instance, soon after the introduction of a swivel-gun to Larne Lough, sixty-six, and in another seventy-six, wigeon were picked up from one discharge;—in addition to the lattre

number obtained by the fowler himself,* eighteen more were procured by other persons.†

The greatest number of wild-fowl killed in Belfast Bay within thirty years were obtained about twenty-two years ago, on the introduction of the first swivel-gun. The owner of this great engine of destruction killed during one week under the most favourable circumstances of weather—a continuance of severe frost when birds were driven from the inland waters to the estuary—168 couple of brent geese, wigeon, wild ducks, and teal. Sold at the low price of 1s. 8d. a couple to the dealers (an average rate at which he was paid for the four species during the season), they produced £14. This shooter—who was a stranger—lived during the winter in a boat in the midst of the best of the shooting, and shot both by day and night. Since that period about the extreme number of the above species killed in a week by the various shooters here may have amounted to from 100 to 125 couple, of which wigeon were always the most numerous;—occasionally not twenty brace would be had in a week. The wild-fowl shooters, until the last few years, received from 1s. 6d. to 2s. 6d. a couple for wigeon from the dealers, who sold them at about 6d. a couple profit; but the former price was near the maximum in the winter of 1849–50. Although these birds have been reduced in numbers in the north of Ireland of late years, the markets are better supplied with them than formerly, owing to the much greater quantity killed by the swivel-guns than by the ordinary fowling-piece. This serves to keep down the price; and, besides, game of all kinds, having become much cheaper, is generally preferred.

Wigeon, when wounded by boat-shooters, retreat in all directions, seeking the sea-banks or sometimes the land, where, concealing themselves in drains, &c., they are more difficult to be captured than if they kept, like the brent geese, to the sea. They

* Mr. Johnston of Glynn.

† Mr. R. Chute "counted seventy-five wigeon that the celebrated Buckle, Col. Hawker's man, shot in Dingle Bay, in the winter of 1842–43, at one shot with his punt gun. It was duskish at the time; and fifteen more that had been killed at the same shot were found dead on the following morning."

are very expert divers, and conceal themselves by sinking the body beneath the surface, leaving a portion of the bill only above it; a feat which they will perform days after having been winged. They seldom, when wounded, attempt to dive from the flash of the gun, as the diving ducks, under such circumstances, are in the habit of doing. An experienced wild-fowl shooter has remarked, that the golden-eye dives from the flash even of a percussion gun before being wounded, though he has never seen the scaup or pochard do so until afterwards—of the tufted duck he has had little experience. Wigeon, wounded when flying over land adjacent to water, betake themselves to it, contrary to what has been stated of them when struck by shot at sea.

Wigeon have latterly become very much scarcer in Belfast Bay, owing to different causes;—the annually increasing shipping of the port; the steam-vessels with their black smoke particularly alarming them; extensive portions of the sea-banks being reclaimed; the gas-lights of the town; each and all of these together have had a tendency to make them change their quarters. "But worse remains behind"—the swivel-gun shooters, three of whom at least are at some portion of every day in pursuit of them. Their persecution, commencing soon after the arrival of the birds in autumn, has them pretty well driven away early in November, and few are killed between this time and Christmas: from which period until they leave in spring the most are now procured.

The swivel-guns, by which alone any quantity of birds have of late been obtained, are large guns, $7\frac{1}{2}$ to 8 feet long in the barrel, and from $1\frac{1}{4}$ to $1\frac{1}{2}$ inch wide in the bore. They are either placed on swivels, or otherwise fixed in small flat-bottomed boats, made for the purpose, and only large enough to contain one wild-fowl shooter. The charge for one of these guns is from $2\frac{1}{2}$ to 3 ounces of coarse powder, and from $\frac{3}{4}$ to 1 pound of large shot ("No. 1 to AA"). The ordinary distance from which this is fired at a flock of birds is 100 yards; sometimes, with the larger-sized shot, 150 yards. When pellets are used, the latter is an ordinary distance; and above 200 yards an occasional one, with

fatal effect. The birds are generally fired at on the water, but sometimes on wing also. They have, as a natural consequence, become much wilder and more on the alert since these large guns have come into use.

Inland Shooting. — Strangford Lough has its own immense stock of wigeon, which remain always there during the season, as well as its daily visitors from the neighbouring bay, for it also produces the favourite *Zostera* in abundance. A chain of high hills lies between these two marine loughs, and, as the wigeon flew pretty much over the same track, it was a regular practice of shooters to station themselves behind the fences about the hill-top before daybreak, to get a shot at the birds as they passed overhead. Hence some persons regularly went from Belfast, a distance of three Irish miles, in the dark, on the chance of getting a passing shot. When quite calm and fine, the birds generally flew high and out of range, but when blowing hard, and especially if against them, they kept low, and shots were tolerably certain to be had. They flew so very low, when it blew a gale, that, in the words of the shooters, "the flocks had to rise to get over the ditches!"* But this sport, like the barrel-shooting, has been discontinued on account of the diminished number of birds.

When a low tract of marshy ground, called the *bog-meadows*— commencing about a mile and a half from the town of Belfast, and extending a mile in length—is flooded in winter, wigeon, and others of the duck tribe, resort to it at twilight to feed. The ditch-banks, which divide the fields, remaining dry, are then frequented by fowlers to get shots at the birds as they pass. If it be about the time of high water, when they cannot feed in the bay, different species fly thence to these meadows, and do so regularly from inland places of security where they have been throughout the day; but not very many were killed here during my own experience of wild-fowl shooting, and now the pursuit is almost abandoned. I have often gone for this sport, and felt a kind of wild joy in hearing the ringing of the pinions through

* 'Ditch' in the north of Ireland is applied to the bank of earth, and not to the sunken portion of the fence.

the air. From the sound of the wings alone the mallard, wigeon, teal, pochard, &c., could be distinguished, and, though invisible from the darkness at the time of flight, or the height at which the birds passed overhead, the sportsmen, returning homeward, could each recount what species had passed his way. Just before the wild-fowl appeared, and when the flood was not too high for the snipes' feeding, these birds came, as if from the clouds, falling, almost shower-like around, and in the momentary glance we had of them between us and the light sky of the dying day, they, with their long bills directed downwards, had quite a spectral aspect, as with ear-piercing "screagh" they sought the earth. But once on the ground and in great profusion, "a solemn stillness" reigned until the wild-fowl came, when our shots roused the "lang-nebbed things," screeching into the air again. As in the bay, the flying time continued for about twenty minutes, after which the fowlers took their departure homewards, unless the moon were soon to rise, when they would remain for a second flight of the birds already there, from one part of the meadows to another, as well as of new comers; but this was less certain than the flight at twilight. At the latter, particular places were selected for the birds flying from special localities, as Ballydrain lake, the bay, &c.; but for the flight at the rising of the moon it was mere chance what course would be taken. The appearance of the birds viewed between us and the moon, surrounded by beauteous groupings of clouds, may readily be imagined. There was much wildness too — an aspect of original nature—in the scene around: an expanse of water in which the moon and clouds were mirrored, with the surface most picturesquely broken by little patches of ground uncovered by the water, and single tufts or variously-sized masses of rushes, rising here and there throughout the whole extent.*

---

* A mode of obtaining wigeon not noticed in the preceding pages may here be mentioned, though it is a very old one.—

In 1837, I was informed that it had long been and was then a common practice to place nets on the salt marshes at Ballykelly, near Newtownlimavady, for the capture of wigeon, and that many were thus procured.

The following note on the instinct of a wigeon appears in the MS. journal of the late John Templeton, Esq. :—"August 3, 1810. Being accustomed to have tamed wild-fowl * * * I have remarked that the cry expressive of danger was understood by all, though of different species, and never heard by them before. Some years ago I had a tamed wigeon (*Anas penelope*), which was accustomed to go about my house. On a hawk appearing in sight, a common hen gave the scream of terror, and the wigeon, perfectly understanding that danger was at hand, fled to me for protection, and remained crouched close to my feet till all apprehension of peril was past."*

A wild-fowl shooter has remarked to me, from his own experience, that shelldrakes, scaups, wigeon, teal, and brent geese, are much more easily tamed than the mallard or wild duck. Winged wigeon, placed on the pond at the Falls, soon became tame, but never bred either among themselves or with other species. The males were pugnaciously disposed towards each other.

On examining the food contained in a number of wigeon shot in Belfast Bay at various periods, and in weather of all kinds, I have found only the remains of vegetable matter and sand. Their food, like that of the brent geese, is the *Zostera*. As this plant is to be had during their stay, they are considered good for the table all the time; unlike those on the Northumberland coast, that are obliged to resort to a different kind of food which renders them rank after Christmas.† An observant shooter is of opinion that the brent geese and wigeon nip off the withered top of the *Zostera*, and eat the heart and root of the plant—but they certainly eat the sound portions of the long leaves also. Our wigeon, thus living in the midst of plenty, are not disposed or compelled, like the American species described by Wilson, to rob either the canvas-backed duck or any of its tribe of their labours.‡ In February 1848, I was sent a plant found in a wigeon by one of our oldest wild-fowl shooters, who reported his

* Communicated to Mrs. Priscilla Wakefield, for her 'Anecdotes of Animals.'

† Selby, vol. ii. p. 325.

‡ Sir William Jardine's edition of 'Amer. Ornith.' vol. iii. p. 110.

having never seen it before in this or any other species of bird. It was the *Enteromorpha clathrata*, which profusely covers parts of the shallow mud-banks of Belfast Bay. Wigeon shot in the fresh-water of Lough Neagh, in March, have contained the tops of *Equisetæ* and various subaquatic plants.

Sir William Jardine remarks, on Mr. Waterton's considering the wigeon "a more familiar bird than either the pochard or teal," that, "in our own shooting practice, we have always found it much more difficult to approach than the latter." In bogs and marshes where the teal is feeding, as it does when undisturbed during the day, I have found it the most easy of access of all its tribe. But on small lakes or sheets of water—as Ballydrain lake—frequented by various species of ducks throughout the day, and where they reposed in perfect safety, I have remarked that the flocks of teal were the first to spring into the air at my approach; the mallards next; after them the wigeon; and, lastly, the diving species (pochards, tufted ducks, and golden-eyes). It is a beautiful sight to behold them all wheeling through the air before they alight at a more distant part of the water: flocks of the elegant little teal being, perhaps, the most interesting from their sudden turning and rapid flight, one moment rising high into the air, and as quickly wheeling down again towards the water as if to alight, but having no such intention when thus at their utmost speed; their cry, too, all the time ringing acutely on the ear.*

The wigeon is plentiful in the numerous suitable localities around the coast, and on the lakes and rivers of Ireland. Although not so restricted to particular haunts as the brent goose, it prevails wherever that bird is found, the *Zostera* being the attraction to both species. Captain May (late of the Inniskilling Dragoons) has mentioned to me that twelve and a half brace of wigeon, ducks, and teal were shot by himself and his sporting friends on a pool near the Salten river (Norway) on the 13th of July, 1849.

* This may seem contradictory to what is stated under that species at the same locality, but different days are alluded to, and the observations of each correctly noted down.

In Colonel Hawker's 'Instructions to Young Sportsmen' an excellent account of wigeon, and the methods of shooting them, is given.

THE AMERICAN WIGEON.

Anas Americana, Gmel.

Is, on the following testimony, believed to have been obtained.

As recorded by me in the 'Annals of Natural History' for 1845 (vol. xv. p. 310) :—Henry Bell, an intelligent man of middle age, who since he could carry a gun has been a wigeon-shooter in Belfast Bay, and for the last eight or nine winters has given up his whole time to the pursuit, by which he earned his livelihood, visited Strangford Lough "professionally" towards the end of February 1844, with his punt and swivel-gun. Hearing on a dark night the call of wigeon,* he fired towards the place whence the sound proceeded, and picked up a single bird, which differed in plumage from any he had ever seen. Its form at once marked this bird to his eye as a wigeon of some kind, but in a state of plumage unlike that of the common species of either sex at any age: of this he was a good judge, from many hundreds having passed through his hands, and from his being very observant of the species of birds and the changes of plumage which they undergo. He described it as a *wigeon* in the plumage of a *teal.* The large markings on the lower part of the sides of the neck and on the breast, instead of being roundish as in the teal, were somewhat of a semicircular form, and varied in size from "one half to nearly the whole size of a man's finger-nail." On the top of the head it was whitish like the old male wigeon, but of a purer colour, and, like it, had the white marking on the wing, both

* According to Wilson's description of the call of the American wigeon, it is very like that of the European species.

characters denoting an old male bird of its species. On the figures of the American wigeon in the works of Wilson (Jardine's edit.) and Yarrell being shown to the shooter, he felt confident that his bird was of the same species, the former representing its plumage the better of the two, and the latter its form, as the neck was thicker than that of the common wigeon. Although he thus noted the bird particularly, and, with another fowler who accompanied him to Strangford, held a kind of inquest on its species, it was unfortunately sold with his other wild-fowl, as, from his having seen singular varieties of birds in the hands of bird-preservers, he thought this might be a remarkable state of plumage of the common wigeon:—of a second species he had not at that time heard. He is certain of having killed birds of the same kind in Belfast Bay, but never any so far advanced towards adult male plumage. Placing entire reliance on the discrimination and accuracy of Bell, I have not hesitated to notice this bird as a visitant to our coast. To him also we are indebted for the only *Tringa platyrhyncha* obtained in Ireland; he at once perceived that the specimen was distinct from the dunlins killed at the same time, and preserved it accordingly.

The only notice of the American wigeon having been obtained in Great Britain to the date of publication of the second edition of Mr. Yarrell's work in 1845, is, that in the winter of 1837–38 two of these birds were seen by Mr. Bartlett at the same time in the London market, but where they were killed was not known. In works on the birds of Europe, published down to 1844, this species is not noticed as having occurred on any of the coasts of continental Europe. It is common to those of North America, where the rice-fields of Carolina are favourite feeding-grounds.*

* The Summer or Wood Duck, *Dendronessa sponsa*, Linn. (sp.), has occasionally been killed in Ireland, but the victims had probably escaped from confinement. Dr. Harvey of Cork informed me of a couple (an adult male and female?) having been shot by Wm. Crawford, Esq., on the Carrigaline river, within, and not far from the mouth of, Cork harbour, on the 10th of October, 1845. The two only were seen. On mentioning the subject at that time to Mr. R. Ball, he stated that some of these birds had been kept on ponds in and about Cork, and that six or eight individuals

THE EIDER DUCK.

Somateria mollissima, Linn. (sp.)

Anas „ „

Is an extremely rare visitant.

In 1834, I was informed by Mr. Glennon, bird-preserver, Dublin, that he had set up, for Sir Richard Levinge, Bart., a specimen which was shot at Wexford. In 1838, he mentioned that since the former period he had been sent two or three fresh birds, but where they were killed was unknown to him. Dr. C. Farran kindly wrote to me on the 23rd of May, 1840, that he had just received from Mr. John King, of Bremore, Balbriggan (county Dublin), a fine male eider alive. Its captor, attracted by the size and unusual plumage of the bird, when struggling to get up some rocks, launched a boat and secured it. On examination, it was found to have received a severe injury in one of the thighs. This individual was noticed by me in the 'Annals of Natural History' (vol. v. p. 365), as the first obtained in Ireland, of which I had certain and full information. In January 1842, the Rev. H. H. Dombrain announced, at a meeting of the Dublin Natural History Society, that he had just received two fresh specimens of the king eider, from the coast of Mayo, one of which he would present to the Society.* This bird was a female, and in that state of plumage in which the king and the common eider are scarcely

had flown away from the Zoological Garden, Phœnix Park, Dublin. Two very fine adult males, which had been shot on the river Blackwater, near Youghal, about the month of December 1849, came under the notice of Dr. Harvey. There are many fine demesnes on the banks of this noble river. About Belfast too—where they were kept on ponds—one or two are said to have been killed.

The summer duck is noticed as having been shot in England, in the 'Zoologist' (vol. vii. pp. 2353, 2382, and 2421).

Wilson informs us that this "most beautiful of all our ducks * * * is familiarly known in every quarter of the United States, from Florida to Lake Ontario, * * * and is equally well known in Mexico and the West India Islands. During the whole of our winters they are occasionally seen in the States, south of the Potowmac. * * * In the more northern districts, however, they are migratory."—'Amer. Ornit.,' vol. iii. p. 120. Jardine's edit.

* Report Dublin Nat. Hist. Society, 1841–42, p. 1.

distinguishable; the form and size of the bill alone determining to which species an individual belongs. As I required positive information respecting the bird, the attention of Mr. Wm. Andrews, the present secretary of that society, was called to it. This gentleman kindly examined the specimen, and favoured me with drawings of the bill, which proved it to be the common eider. This and the individual noticed immediately before it, are the only birds obtained in Ireland that can positively be announced here as the *Somateria mollissima*.

The most southern breeding-haunt of this species, on the British coast, is the Farn Islands, off Northumberland, which are in latitude a little to the north of the extreme northern point of Ireland. Southward of this, in the British and European seas, the eider duck seems to be only of occasional occurrence. It breeds on various islands, &c., both on the eastern and western sides of Scotland, as well as on some of those off its northern coast.

The late Mr. G. Matthews, on return from his sporting tour in Norway, supplied me with the following note:—"Eider ducks were observed on all parts of the coast from Trondjeim to the Alten Fiord, and, I believe, are quite as numerous southwards. The ducks are very tame; the drakes very wild. We seldom shot any of these birds, as they are valuable, and preserved on account of their down. This is not of any use taken from the duck after death, but is obtained from the nests after the brood is hatched, the parent birds having plucked it from their breasts to line them with. At Neræ Sound, Bergsfiord, Tromsoe, and Volkvar, we saw great numbers, especially at the last place. They appeared at all seasons of the year." The eider is one of the northern birds of America as well as of Europe.

THE KING EIDER.

King Duck.

Somateria spectabilis, Linn. (sp.)
Anas „ „

Is extremely rare.

In the 'Annals of Natural History' (vol. v. p. 6), I recorded the occurrence of a female bird which was shot at Kingstown harbour, near Dublin, about the 1st of October, 1837, and a few hours afterwards came into the possession of Mr. R. Ball: when first seen it was accompanied by two others. The specimen is preserved in the University Museum, Dublin. Mr. R. Chute has obtained two king eiders on the coast of Kerry (as determined by comparison of their bills with drawings of those of the eider and king eider), one in the winter of 1843, from Derrynane, and the other in that of 1845–46, from Tralee Bay: they were either females or immature males. On the 11th of March, 1850, a bird of this species, while swimming alone, was shot in Belfast Bay, and came under my examination on the 12th. Its weight was 3 lbs. 5 oz. The entire bill was dusky, having the colour and general appearance of india-rubber as it is sold at the stationers'. Tarsi and toes very pale olive or dull fawn-colour; the membranes dusky. Irides very dark brown. On dissection, it was found to be a female; the eggs only one-twelfth of an inch in diameter. The stomach was filled with the remains of crustacea and mollusca, viz., an *Inachus* of middle size, the largest *Portunus arcuatus* that I had seen (and perfect excepting the arms), a *Nucula margaritacea*, and a small buckie-whelk (*Buccinum undatum*).

The preceding notes relate to more king eiders than are on record as obtained in Great Britain, south of the Orkney Islands,* at least until 1845. Mr. Macgillivray mentions the species as

* It is only "a rare occasional visitant" to these islands.—'Hist. Nat. Orcad.' (1848)

not having occurred south of that group, while Sir Wm. Jardine and Mr. Yarrell merely notice the individual, said by Mr. Jenyns to have been killed in Sussex. According to Mr. St. John, it is rarely seen at the Kyle of Tongue.*

The king eider is still more of a northern species than the common eider, and breeds abundantly on the shores and islands of the arctic regions. It does not retire far southward during the winter, but frequents the Northern Atlantic in large flocks. These birds often afforded a valuable supply of fresh provision to the crews of the vessels employed on the arctic voyages.† According to Dr. Richardson, they "have not been seen to the southward of the 59th parallel."‡

During a sporting tour to Norway, made in a yacht in the summer and autumn of 1849, by Captain May, late of the Inniskilling dragoons, and two other officers of that regiment, the common and the king eider were thus observed;—the common species frequently, from the middle of June to September, between Copenhagen and Bodo, and a little to the northward of the latter place. Some were shot on the islands of the Kattegat, between Copenhagen and Christiansand, at the first-named period. They became gradually scarcer towards the arctic circle, and far north, towards Hammerfest, none were seen. Here their place was supplied by the king eider, which appeared commonly in the fiords from July till September, from Bodo northwards, and increased thence in numbers towards the North Cape. Some of them were killed: they "carried away" a great deal of shot. A few were baked in pies when nothing better could be had, but were considered to have a very strong disagreeable flavour.

Steller's Western Duck, *Somateria? Stelleri*, Pall. (sp.), *Anas dispar*, Sparm., has been included in the British catalogue from a single individual procured in Norfolk, in February 1830. Since the publication of the 2nd edition of Yarrell's work (1845), another of these birds is stated to have been obtained—in Yorkshire, in August 1845.‖

* 'Tour in Sutherland,' vol. i. p. 140. † Sir James C. Ross.

‡ 'Faun. Bor. Amer.,' p. 437.

‖ R. J. Bell, in 'Zoologist' for 1846, vol. iv. p. 1249.

This species is of occasional occurrence in the more northern countries of Europe to Germany inclusive, and in similar latitudes of Asia and North America, but is very rare in both hemispheres.

THE SURF SCOTER.

Surf Duck.

Oidemia perspicillata, Linn. (sp.)
Anas ,, ,,

Has been once obtained.

I PUBLISHED the following notice of one in the 18th volume of the 'Annals of Natural History':—

"A beautiful adult male of this species was shot at Ballyholme, Belfast Bay, on the 9th of September, 1846, by Snowden Corken, Esq. It was alone, about two hundred yards from the shore, allowed three shots to be fired at it before attempting to dive, and was killed at the fourth or fifth shot, on reaching the surface after having dived.* Two of these birds had, a day or two before, been observed in company in the same locality, and one individual was seen several times in the course of a few weeks after the subject of this notice had been killed. 'The weight of the specimen was 1 lb. 14 oz.; its length, 21 inches; wing, from carpus to point of quills, 9 inches 2 lines; tarsus, 1 inch 6 lines; middle toe and nail, 2 inches 8 lines; breadth across the wings, 27 inches;'—as noted during my absence from home, by Dr. J. D. Marshall, but for whose kindness, and the considerate attention of Mr. Darragh (curator of the Belfast Museum), I might not have had the opportunity of seeing the bird, and certainly

* Audubon remarks, that "it is an uncommonly shy bird, and therefore difficult to be obtained, unless shot at while on wing, or when asleep, and, as it were, at anchor on our bays, or near the shore; for it dives as suddenly as the velvet and scoter ducks, eluding even the best percussion-locked guns."—'Orn. Biog.,' vol. iv. p. 163.

could not have known the kind of food which it procured on our coast, or the form of its trachea. The contents of the stomach, preserved for my inspection, consisted of ten perfect specimens of the bivalve shell, *Nucula margaritacea*, from small to adult size, and a portion of the shell of a very large *Solen pellucidus*, with fragments of the shells of other species. The bay where this bird was shot, is of a sandy nature, such as Wilson remarks to be frequented by the surf scoter on the coast of North America. 'Spoutfish [*Solen*] and small bivalve shell-fish,' according to him, are its principal food;—one of the only *mollusca* that he particularizes was therefore found in the present individual. As the species of *Nucula* mentioned is generally dredged in from three to five fathoms (18–30 feet) water in Ballyholme Bay, we must suppose that the bird dived to that depth to obtain these shell-fish—a supposition in accordance with Audubon's remark, that this duck 'is frequently observed fishing at the depth of several fathoms.'

"All the general descriptions of the colours of the surf scoter sufficiently mark the species, but none that I have read gave me a proper idea of the beauty of the head and bill—more especially of the latter,—as exhibited in this bird. Its entire plumage is of a rich black colour, with a reddish violet reflection, excepting the pure white marking in front of the head between the eyes, and that of the same colour extending down the nape. The former is heart-shaped, $1\frac{1}{4}$ inch in length, and the same in breadth; the latter occupies $2\frac{3}{4}$ inches in length, is 10 lines in breadth at the top, and gradually narrows downwards to a point. The irides are pure white. A peculiar and handsome feature is presented in the plumage advancing so far down the ridge of the bill as to be half-way between its lateral base and the tip, and in a vertical line with the nostrils. The whole of the elevated portion of the upper mandible next the frontal base is of a carmine-red, shading into rich yellowish-orange, which occupies the portion from the nostrils forward to the ungnis, this being of a paler shade of the latter colour. The anterior half of the space between the nostrils and the lateral base of the bill are white, of a pearly lustre; the

posterior half chiefly occupied by a nearly square black spot (7 lines in diameter), in a 'setting,' as it were, of three colours; the portion of the mandible between it and the lateral base (a line in breadth) being carmine-red; that above it, gamboge-yellow; below it, white, of a pearly lustre, as it is anteriorly. Under mandible white, except towards the nail, where it is orange; nail, a mixture of white and brownish-orange. Legs and toes deep red, inclining a little to orange, and blotched more or less with black; this latter being the colour of the webs and nails, with the exception of one nail, which is white.

"A very full description of the trachea of the surf scoter, with measurements of the different portions, is given by Audubon (vol. iv. p. 166), who correctly remarks, that it presents the same structure as that of the velvet duck (*Oid. fusca*).

"The *specific* differences, however, seem to me worthy of being figured—which, in so far as I am aware, has not yet been done—and for that purpose I have made a drawing of the trachea of the present specimen. This, for the sake of comparison with that of the velvet duck, figured by Yarrell, has been drawn on the same scale. It will be seen from my figure, that the surf scoter, as well as the species just named, exhibits within the upper expansion of the trachea "an aperture on each side," &c., as particularly noticed in the case of the velvet duck by Mr. Yarrell (B. B. vol. iii. p. 219, 1st edit., or p. 316, 2nd edit.)."

The figure alluded to, and measurements of the different parts of the trachea, will be found in the 'Annals,' vol. xviii. p. 370.

"Although the *peculiar* form of the trachea, as well as the external characters generally, place this species next to the velvet scoter, yet in the form of the bill the two species differ very considerably. This difference has been admirably pointed out by Mr. Selby in the following words:—'In this species [*Oid. perspicillata*] the bill has not that flatness and expansion in front of the nostrils that are so conspicuous in *Oid. nigra* and *Oid. fusca*, but assumes, in a great degree, the characters of the succeeding genus *Somateria* (Eider), by the tip being suddenly contracted, and the nail (which is also more convex than in the other species)

being brought to a narrow rounded point; the entering angle of the forehead also projects, as in the common eider, as far as the nostrils. The lateral parts of the bill at the base are very tumid, and are particular from the marking there displayed, these swellings being entirely exposed, and not in part concealed by the feathers, as in the velvet scoter.'* The highly arched form of the bill above the nostrils requires, however, especial notice.† In the absence of a figure, some idea may perhaps be given by the following two notes of its depth :—

	in.	lin.
Depth of bill at base of ridge where plumage terminates—16 lines from tip	0	10½
Depth of bill at 10 lines from tip	0	3
Length of bill above (not following curve)	1	4
Length of bill to rictus	2	6
Length of bill to base of lateral protuberances	2	4
Breadth of bill between the lateral protuberances	1	4

"The specimen which has furnished the subject of this communication was in course of being preserved for Dr. Charles Cupples, of Lisburn, who, on being informed of its rarity, liberally presented it to the Belfast Museum.

"The surf scoter is known only as a British species from its having been obtained at the Orkney and Shetland Islands, with the exception of one individual, recorded by Mr. Gould as obtained in the Frith of Forth, and 'a recently shot one, sent to Mr. Bartlett for preservation,' as noticed in Yarrell's work, vol. iii. p. 322, 2nd edit.; but the locality where it was killed is not mentioned—the 'Naturalist,' vol. iii. p. 420, is referred to for the original notice of this specimen.

"Wilson (briefly) and Audubon (very fully) give interesting

* 'Illust. Brit. Orn.,' vol. ii. p. 335.

† Yarrell's figure of this species is admirable, with the single exception that the peculiar form of the bill is not represented. The arched profile of the upper mandible in the specimen under consideration (probably from its being a very old male) is still more strongly marked than in Mr. Selby's figure, representing a male bird of life size.

descriptions of the habits, &c. of this species, which is common on the North American coast, increasing in numbers northward."

THE VELVET SCOTER.

Velvet Duck ; Double Scoter.

Oidemia fusca, Linn. (sp.)
Anas „ „

Is an occasional winter visitant to the coast.

In the 'Proceedings of the Zoological Society for 1835' (p. 79), I noticed a specimen as having been shot at Clontarf, near Dublin, on the 2nd of December, 1833. In March 1834, Mr. Glennon informed me that he had, in the course of many years, received only two fresh specimens which were killed in Ireland;—and subsequently mentioned that one was shot on the river Liffey in the winter of 1837–38. A fine male bird was got at Portrane, on the Dublin coast, on the 13th of January, 1838. This species was procured in Wexford harbour previous to 1836, when the circumstance was made known to me.* An immature velvet scoter obtained in September 1847 at Dublin, in a recent state, has the white mark on the wing, but no white on the head; the plumage of the breast is of a mottled white and blackish-brown. It does not agree with the description of a young male, and is, I presume, a young female;—which I have not seen described. This specimen, with the adult bird already noticed, from Portrane, is in the University Museum, Dublin: both were purchased in a recent state by Mr. R. Ball. Mr. R. J. Montgomery, writing from Queensborough, Drogheda, in March 1849, mentioned that a velvet scoter had been killed in the bay there "last winter," and informed me, on May the 10th, that an adult female had been taken that day on a hook set by a fisherman in Drogheda Bay.

* Major T. Walker.

My informant, a few days afterwards, saw a male bird there, which he imagined to have been her mate, and tried to obtain a shot at him but, unsuccessfully, owing to his wildness. About the 1st of March, 1850, an adult male of this species was shot near the lighthouse in Youghal harbour.*

The only occasion on which I have seen the velvet scoter satisfactorily in a wild state, was during a visit at Twizel House, Northumberland, in the autumn of 1838. When on the beach, one day—about the 1st of September—in company with more than one describer of the species (Mr. Selby, Sir Wm. Jardine, and the Rev. L. Jenyns), several of these birds appeared, swimming between us and the Farn Islands; and though at a considerable distance, the white mark on the wing unerringly distinguished them from the common scoter, with which only they could be confounded.

In the month of March, Sir Wm. Jardine has pointed out to me, in the Frith of Forth, off Portobello, what he knew to be small flocks of these birds; but they were too distant for the species to be distinguished from the beach. This author's observations upon velvet scoters in that locality, where he has gone in pursuit of them in boats, will be found noticed in his work on 'British Birds,' vol. iv. p. 164.

On the eastern coast of Scotland and that of the north of England, the velvet scoter is chiefly found, and it continues there in little flocks all the winter. In Ireland it has hitherto been observed—as the foregoing localities denote—chiefly on the eastern side of the island, and there very rarely. Velvet scoters were observed by Captain May on the coast of Norway, in 1849. Late in autumn he saw a number of them, in company with king eiders, &c., near Tromsoe. This handsome duck is of occasional occurrence in winter as far south as the Mediterranean, but is properly a northern species, in both the eastern and western hemispheres.

* Dr. Harvey, of Cork.

THE BLACK OR COMMON SCOTER.

Black Duck.

Oidemia nigra, Linn. (sp.)
Anas „ „

Is a regular visitant to certain localities on the coast.

The places of its regular or occasional occurrence known to me shall be noticed from north to south. At Malin Head, the extreme northern point of Ireland, and Portrush, near the Giant's Causeway, it has been obtained;—at the latter locality in March 1840.* One, killed at Dundrum, on the coast of Down, on the 13th of March, 1824, came under my notice, and three of these birds were seen in the river which falls into the bay there in the winter of 1831–32.† Numbers of scoters were observed at Lurgan Green, county of Louth, so early in the autumn as August 1839.‡ I had seen a specimen—one of five—killed near Dundalk, a few years before that time.

The fullest information respecting the scoter has been communicated to me by R. J. Montgomery, Esq., and relates to Drogheda Bay. In the months of September and October of 1842, 1843, and 1844 (in August also of the last year), flocks, amounting to some hundred individuals, were seen there by that gentleman in the course of a day, forty to fifty birds at least being generally in one flock. In other years, also, they came under his notice, but were not so plentiful; not nearly so in the winter of 1848–49, when the information respecting the species was supplied to me. They are well known to all the fishermen by the name of "black ducks," and are often captured on their hooks. They formerly frequented the mouth of the river, but are now generally to be seen farther out in the bay.

My correspondent remarks:—"I have been endeavouring to ascertain the reason of the diminution in numbers of the scoters

* Colonel Portlock, R.E.
† The late Mr. John Montgomery.
‡ Mr. H. H. Dombrain.

here, and the only one I can assign is this: there were immense beds of mussels in the mouth of the river, and in some places along the shores of the bay, which I suppose attracted them in such numbers. There has now sprung up a new trade in mussels to Liverpool, and from two to three hundred people, chiefly women, are sometimes employed in collecting these shell-fish at low water, at the entrance of the river. They are washed there, put up in bags, and sent to Liverpool for consumption, where they meet with a ready sale. The mussels are becoming scarce, as well as other small shell-fish, which I think accounts for the diminution of the scoters: certainly there is not one to be seen now for fifty formerly." To this interesting statement I shall only add, that the gatherers of the mussels would not disturb the birds at their feeding-time, as the banks are then covered with water.

About Dublin, scoters have not unfrequently been procured. Mr. W. S. Wall informed me, in 1834, that he had, at different times, received three, which were killed at Clontarf. In the winter of 1837–38, one shot on the coast at Malahide; a second at Chapelizod, on the Liffey, a few miles inland; and a third on fresh-water, at Finglass Bridge, were sent to him to be preserved. About this period one was shot at Balbriggan, on the sea-coast, and at the end of December 1848 an individual was killed in Dublin Bay:—a flock was seen here on the 20th of January, 1850.* At the island of Ireland's Eye, near its entrance, Mr. R. Ball, when once looking for mollusca among the rocks, was startled by a flock of about twenty scoters passing almost close past his head. The boatmen who observed them remarked that they were "common black ducks."

A fine adult male bird (which I have seen in Mr. Warren's collection) was shot in December 1833, on the river near Blessington, county of Wicklow, nearly twenty English miles from the sea. Two male scoters were obtained about the 1st of April, 1843, by Mr. R. Davis, jun., of Clonmel, one of which was shot

* Mr. J. Watters, jun.

on the river Suir, near the town of Thurles, county Tipperary, more than forty miles in a direct line from the sea. The other, sent from Wexford, may be presumed to have been killed in the harbour there, where the species is not unfrequent.* Scoters have been killed near Tramore, in the county of Waterford, and they are not uncommon—immature birds particularly—in Cork harbour.† In Kerry, scoters frequent the mouth of Tralee Bay, about the Maharee Islands, in small flocks during the winter: seven birds killed at one shot there a few years ago, came under the notice of Mr. R. Chute. When visiting the island of Achil, in 1834, I learned from Lieutenant Reynolds, R.N., that he had shot scoters there.

Mr. Yarrell correctly remarks, that "the scoter is not very often found on fresh-water, inland, during winter," and gives one instance of its so occurring, in the first edition of his work, and two instances in the second edition. Of the Irish localities just mentioned, where this bird has been obtained, several are inland.

An interesting note appeared in the 'Zoologist' for 1848, to the effect that in the first week of July that year, fourteen scoters appeared opposite Wray Castle, on Windermere, which is visited by the species every year about that period. They never remain more than one or two days. Two of the fourteen birds were killed. On the previous 23rd of May, a male velvet scoter was shot there, and a female was seen about the same time.‡ In like manner both species are sometimes observed about the Lake of Geneva, on their migratory route; the latter being noticed as of accidental passage in April, and single individuals of the common scoter as being seen in May.‖

Mr. Selby says, and no doubt from personal observation, that the scoter frequents shores particularly of a rocky character. In Ireland, however, it has chiefly been met with in sandy bays, as at Dundrum, Lurgan Green, Drogheda Bay, localities on the Dublin coast, &c.

* Mr. Poole. † Dr. Harvey.

‡ Thomas Gough. Kendal, vol. vi. p. 2230.

‖ Necker's Memoir on the Birds of Geneva.

On the English coast, the velvet scoter is considered more rare than the *A. nigra*, which is likewise the case in Ireland, but on the coast of Scotland the latter is the more uncommon of the two species.*

The Red-crested Pochard (*Fuligula rufina*, Pall. (sp.), *Anas rufina*, Pall.) was introduced to the British catalogue from a specimen obtained in England, in January 1826, since which period a few others have been met with in that country, though none have been procured in Scotland or Ireland. The east of Europe, a part of Asia, and of northern Africa, are the chief abodes of this species. It has occurred in most of the countries of the more southern half of Europe.

THE POCHARD.†

Red-headed Pochard; Dun-bird.

Fuligula ferina, Linn. (sp.)
Anas „ „

Is a regular winter visitant, but varies much in numbers in different years.

Belfast Bay.—In some seasons scarcely any are to be seen here, and the more severe the winter they are generally the more numerous. During portions of two or three successive winters, about the years 1837, 1838, and 1839, they were very abundant. Where the river called Conswater joins the bay at "Adam's point,"

* Jardine. Mr. St. John, in enumerating the birds of Sutherlandshire, does not name the common scoter as at all found there, but notices the velvet scoter, as "in abundance during the winter on the east coast."—'Tour in Sutherland,' vol. i. p. 140.

† Sometimes called goldhead, fresh-water wigeon, and bull-headed wigeon, in the north of Ireland. The name of wigeon-diver is applied to it in Cork Harbour, and Whinyard at Wexford.

is a favourite place of resort, and one day in particular, during a very severe snow-storm, they were literally in thousands there;—the surface of the river exhibited one living mass of them. For many seasons before and after those, pochards were very scarce. In the winter of 1847–48, the chief wild-fowl shooter in the bay obtained only a couple, and, during some other winters, none at all. Occasionally they associate with scaup and tufted ducks. They appear the second of the *Fuligulæ*—after the scaup, and before the tufted duck—and generally arrive by the latter end of October; but December* is usually the earliest winter month in which they are met with in quantity. January or February, especially the former, is the height of their season. They generally take their departure in March, throughout which month, until the 25th, they were here in 1836:—about two dozen *Fuligulæ*, believed to be of this species, were seen on Ballydrain Lake, on the 15th of April, 1832. On the same day of that month, in 1850, one was obtained near Lurgan.

Pochards, as well as scaups and tufted ducks, fly at the dusk of the evening, like the wigeon, to the sea-banks to feed, but at a later hour. I have known several of the two first-named species to be brought by the flowing tide within range, and shot from the barrel in which a fowler was awaiting the flight of wigeon. Pochards and scaups, when wounded on their feeding-banks, run very fast, assisted by their wings, and, when pursued, always move towards the water, in the hope of being the better able to save themselves by diving. A wild-fowl shooter gives an amusing account of the chase of a pochard. He had at one shot wounded two or three, and, as he thought, killed four. The most active of the wounded was first looked after, as it was hurrying with all speed towards the water, which was distant. The shooter followed as quickly as he could, knee-deep, through the soft muddy banks, until weakness and want of breath rendered him unable to move a step farther. The bird, fortunately for him, stopped at the same time, perhaps equally requiring to "draw breath." So

* In this month they were once plentiful, when other *Anatidæ* were scarce.

soon as my informant was able to renew the chase, this was recommenced, and continued in the same manner for some time longer, the bird always running when he ran, and stopping when he stopped. At last the object of pursuit was captured, and no mercy shown, though it deserved a better fate. The four *slain* were now sought for, but the chase had lasted so long as to enable two of them to recover themselves sufficiently to make their escape: they were not even seen again. Pochards and scaups, when wounded on the water, steal to the banks if they can quietly reach them, and are so much inclined to remain there, that from this habit alone disabled birds are known from others.

When either species was wounded by one of our shooters, in calm weather, and the water was clear, instead of following them with his gun, he and his companion pursued them, armed with the setting-pole of the boat, which had an iron V-formed fork at the end. The birds were struck with this weapon while urging their way through the water from near the surface, to the depth of eight feet, which was as far as the pole would strike them effectively. In this manner they moved at least as quickly as they could have done by swimming on the surface. The sport was very exciting, from the quick rowing of the boat that was requisite, in consequence of the progress made by the birds, and the frequent change of tack necessary on account of their sudden turnings. They were merely struck by the pole, not brought up on its fork. One person rowed, while the other managed the pole. Many birds have been thus secured.

The same observant shooter has often seen pochards and scaups that dived when wounded, keep close along the bottom, busily using their wings and feet all the time that he was in close pursuit. But, when merely feeding, both species dive down in water from three to nine feet in depth, and scoop along the surface of the mud at the bottom, for shell-fish. That they do so, is evident when the tide is out, by narrow zigzag lines, the breadth of their bills, being then observable. These lines are from one to five yards in length, and of a sinuous form, such as would be produced by the motion of the wings and body during

the onward progress of the birds. My informant and another fowler having remarked the two species feeding at high-water, and then only at a particular part of the bay, examined the bottom there, when the tide was out, and observed these lines. They picked up some shells from the stratum of ooze above the sand, and, on shooting the birds, found the same kind in their stomachs;—these shells being brought to me, proved to be *Tellina solidula*, of small size, not exceeding one-third of an inch in diameter.

Mr. Selby remarks, that "the flesh of this bird is tender and well-flavoured, unless killed in the neighbourhood of the sea, when it frequently acquires a rank and fishy taste" (p. 349). Mr. Yarrell observes more fully:—"Dun-birds [pochards] are in general remarkable for the excellence of their flesh, and probably but little inferior to the far-famed canvas-backed duck of the United States, which it very closely resembles, in the colour of its plumage; but our dun-bird is the smaller of the two. As the canvas-backed duck of America is considered to derive the goodness and flavour for which it is so much esteemed from its taking a considerable portion of a particular vegetable food [said by Dr. Nuttall to be *Valisneria Americana*, *Zostera marina*, and *Ruppia maritima*,] and is much less prized in spring when deprived of it, and obliged to live entirely at sea; so our dun-birds are best while they feed at the mouths of rivers, and about fresh-water; but when they feed at sea on fishes, crustacea, and mollusca, I have found them coarse and ill-flavoured" (vol. iii. p. 235). Wilson and Audubon mention the pochard as highly esteemed in America, and the latter author states that he found food of various kinds in those killed in the shallow ponds of the interior. The pochard, though considered better than the scaup in Belfast, is but little esteemed for the table, and brings no higher price to the shooter than that species—from six to ninepence each. The dealers rarely purchase them, except as a favour from the regular shooters, who supply them with wigeon and brent geese. Yet pochards should be particularly good here, as they always find abundance of vegetable food. Nothing else

(except sand and gravel) did I find in the course of several years, in a number of them dissected, from the beginning of December to the end of March.* The shell-fish noticed at p. 130 were subsequently found. That *Zostera* is not a favourite food, is evident from their predilection for fresh-water, in which it does not grow, and even those killed in Belfast Bay do not contain this plant like the brent geese and wigeon, in which we very rarely find anything else. Soft green vegetable matter, and seeds of various aquatic plants,† are the favourite food of the pochard with us. It should be in the highest condition on these, but justice, I fear, has not been done to its "flesh" here, the market being regularly supplied with wild-fowl of well-known and long-established character, as wild ducks, teal, wigeon, and brent geese. It is, however, considered the best of the diving ducks.

In an article on Walker's 'Original,' published in the 'Quarterly Review' (vol. lv.), there is a good deal said of the weight, &c., of different kinds of game and other birds (p. 466). The following information, which appears there, I could not resist extracting:—

"The greatest novelty, perhaps, is the POCHARD, or DUN-BIRD, a species of wild-fowl, supposed to come from the Caspian Sea, and caught only in a single decoy on the Misley Hall estate, Essex, in the month of January, in the coldest years. The mildness of the season kept them away during the winters of 1833–1834 and 1834–1835; but a few have arrived within the last month (January 1836), and were generally admired by those who had the good fortune to become acquainted with them. Their flesh is exquisitely tender and delicate, and may almost be said to melt in the mouth, like what is told of the celebrated canvas-back duck of America; but they have little of the common wild-duck flavour, and are best eaten in their own gravy, which is plentiful, without either cayenne or lemon-juice. Their size is about that of a fine wigeon."—p. 464.‡

A taxidermist has remarked to me that as the spring advances,

* A shooter and bird-preserver, who has killed many of these birds in Belfast Bay (generally in company with scaups, and sometimes with tufted ducks), states, that the pochards differed from the others in containing vegetable matter, in addition to minute mollusca, on which alone the other species had fed.

† Two pochards, purchased in Belfast market (Nov. 11, 1848) had both crops and gizzards entirely filled with oats. One (Jan. 1849) was wholly filled with extremely minute seeds, excepting a few small fresh-water bivalve shells of the genus *Pisidium*.

‡ Two mature females of the pochard and scaup, shot in Belfast Bay at the end of

all birds of the duck kind, and the bernacle, smell strongly when he is skinning them, much more so than in frosty weather;—this applies, also, to gulls generally. The flesh looks much more delicate to the eye during frost, the fat being white in cold weather, and yellow, or even orange in some species, late in the spring. He was once tempted by the delicate appearance of the flesh of a gull during frost, to eat of it, and found it good.

In the winter of 1847–48, a pochard was captured near Wexford, when lying on its back upon the surface of the water, and its feet in violent motion. When examined, it had no visible mark of injury. The gentleman into whose possession this duck came, saw it occasionally afterwards attacked so violently with what he believed to be cramp, as to be entirely disabled. The symptoms being precisely similar to those under which it was originally taken, he considers that the bird was captured during one of these fits.*

A wounded pochard refused to partake of oatmeal steeped in water, and placed before him, but on his bill being dipped into it, he quickly discovered his mistake, and thenceforth ate of this food with avidity. I have remarked that these birds, which were kept from time to time on the pond at the Falls, were of a gentle quiet disposition.

Audubon remarks that this species is "equally fond of salt and fresh water" (vol. iv. p. 199). It frequents fresh-water much in the north of Ireland, and has been several times, in December and January chiefly, brought to me from Lough Neagh. It is partial to Ballydrain Lake by day, as mentioned under Tufted Duck;—Nov. the 17th, 1832, was noted as early in the season for their appearance here, when about thirty were seen in company with that species. In the following month, both kinds were much more

January, weighed, the former 2 lbs. 2 oz.; the latter 1 lb. 10 oz.: the pochard was in every respect considerably larger than the scaup; its length was nineteen, that of the scaup seventeen inches.

The colour of the eyes of the pochard, according to Mr. Darragh, is, in young females, dark brown; in old females, yellowish-brown. Young males, red and yellow prettily mixed; and in old males bright red.

* Mr. J. Poole.

numerous on this lake, at the same time with quantities of wigeon, teal, and wild ducks. On the 8th of December, 1837, I saw eight pochards, which, with three more, had been killed at a shot on some water near Hillsborough, county Down. Seven of these were adult males, the other was a female; of ten shot in Belfast Bay on the 3rd of January that year, nearly all were likewise old male birds. I have remarked that a singularly large proportion of the pochards visiting this quarter are so; and a wild-fowl shooter, who has killed a great number of them at all periods of the winter in many years, considers that there were at least four males, old and young, to one female.

At Clay Lake, a small sheet of fresh-water, distant about a mile from Strangford Lough, I am credibly informed that a pair of pochards bred in the summer of 1849, as a pair had also done about two summers previously. The species has occasionally been known for many years past to breed in Norfolk, as a few do annually in Holland.

The pochard visits the sea-coast on each side of the island and, also, the inland waters pretty generally. My correspondents residing near the localities about to be named, consider it as follows:—rare in the north-west of Donegal, common in Dublin Bay, and not uncommon in Wexford and Waterford harbours. In Cork harbour it is not rare, but is so in Kerry, where it has been seen on Lough Beg, near the shores of Brandon Bay.* It has been killed on the coast of the island of Achŭl.† The species appears every winter on the rivers and fresh-water lakes of Connaught rather plentifully, but in detached flocks, consisting of from three or four to ten or a dozen birds.‡ "Pochards, tufted ducks, and golden-eyes, as well as mallards, wigeon, and teal, are in flocks on the Shannon all the winter." ||

Mr. Selby remarks of the pochard, that "in the northern parts of England and in Scotland it is comparatively of rare occurrence, either from the deficiency of some particular aquatic plants and

* Mr. R. Chute;—the late Mr. T. F. Neligan marked it with doubt as a visitant to Kerry.

† Lieut. Reynolds, R.N., 1834. ‡ Mr. G. Jackson. || Rev. T. Knox.

grasses, or from these districts being out of its migratory line, from the north-eastern parts of Europe" (p. 347). To the latter cause its scarcity cannot be owing, as the preceding information respecting the species in the more western island fully shows.

The Nyroca Duck, or White-eyed Duck,* *Fuligula nyroca*, Gmel. (sp.), *F. leucophthalmos*, Flem. Bechst. (sp.), has not been obtained in Ireland. One has been seen in the Edinburgh market by Sir Wm. Jardine, but where killed is not stated. The species is said to have "been observed in Orkney." † According to Yarrell, a "few are annually taken" in England, generally in "the eastern counties between the Thames and the Humber." The east of England would, therefore, appear to be the western limit of its regular migration; the few individuals which have been killed more to the westward (as two procured near Oxford, &c.), being stragglers. The more southern portion of Europe eastward of England seems to be its chief habitat on that continent. Its distribution extends over a great portion of central Asia, and the more eastern part of northern Africa.

THE SCAUP DUCK.‡

White-faced Duck; Bridle Duck.

Fuligula marila, Linn. (sp.)
Anas ,, ,,

Is a regular winter visitant to the coast, and the most plentiful of the *Fuligulæ*.

Belfast Bay.

The scaup duck is the earliest of its genus in arriving here, generally making its first appearance in September. For seven successive years—1838–1844—it was first seen in that month; the

* Ferruginous Duck of Montagu and Yarrell. Bewick figures the ruddy shelldrake under the same name.

† 'Hist. Nat. Orcad.' p. 80.

‡ The scaup is sometimes called *Norway duck*, and the old male *green-headed diver* in Belfast Bay: *bridle duck* is one of the names for it in Dublin market. It is called *mule* by the fowlers at Wexford (J. Poole). In reference to the first of these names it may be mentioned that the scaup is called *Norwegian teal* at Banff, Scotland (Rev. J. Smith, in 'Zoologist,' vol. vi. p. 2293).

earliest date being the 14th (1840), the latest, the 29th (1838); at the end of August in 1837 it was observed. Mr. Selby remarks that on the coast of Northumberland the scaup "seldom arrives before the end of October, or the beginning of the month following" (p. 355); and Sir Wm. Jardine makes a similar observation,* probably with reference to the south of Scotland.

Scaups sometimes remain to a late period in this bay. On the 26th April, 1838, two were shot; the north-east wind, which for a time had prevailed, probably detained them: the two days previous to their being killed were bright and very fine. In 1847 again, a flock of between twenty and thirty appeared, on the 24th of that month, about 400 yards from the quays of the town; on the 9th of May, five, and on the 11th, three birds were observed not far from the same place. On the 1st of May, 1849, a flock of twelve, including some fine adult males, was seen. Those continuing here until this period would, I conceive, migrate northwards; but not any remaining so late as the 7th of June, on which day, in 1838, one was shot in the bay:—on being skinned, no indication appeared of its having been previously wounded. During the first week of June 1840, also, a pair of these birds, in full plumage, frequented a part of the bay near the town, and occasionally visited the neighbouring fields. The male was shot, and the female remained about the place for some time afterwards.

Adult males are occasionally killed among the first of the species that appear; but the relative proportion of them seems rather to increase towards spring. Scaups, though commonly associating with the other diving ducks, are very rarely, except in severe weather, seen in company with wigeon; but their first appearance in one season at the end of September, was with that bird; and in the middle of October of another year both species fell at the same discharge. I have only myself shot the scaup on its flight about the margin of the sea, or when swimming within range of embankments which were approached too nearly for its own safety.

* 'British Birds,' vol. iv. p. 139.

A fowler of much experience, who followed it in boats, has remarked of this duck, that when approaching the centre of a large flock, in calm weather, the birds divided into two bodies, and swam away in opposite directions, allowing the "cot" in which the shooters were—they keeping so low as to be invisible—to pass between. Each of these flocks, if similarly approached, would again divide, to the annoyance of their pursuers, who could only get a few birds sufficiently near each other to be killed at one discharge. Scaups were seldom so difficult to be approached as wigeon or wild-ducks, and always made the attempt to swim away; but if the boat approached too quickly on them, they took wing.

They are considered very hard to kill when struck. Eight or nine birds have been obtained at one shot with a shoulder-gun, and frequently about a dozen with the swivel-gun; by its means so many as twenty-four were procured at a shot on the 4th of March, 1845, more than half of which were adult males. On this occasion the shooter approached them unseen, at an unusually early hour in the morning, when they were not expecting an enemy. At such times they float lightly and buoyantly on the water, but, when danger is apprehended, sink themselves in it, so that little more than the line of the back appears above the surface. The scaup and other diving ducks, when wounded, swim very low in the water, often only with the bill from the nostrils exposed. When keeping thus and the surface is ruffled, they cannot be seen by the shooter, though when calm, the ripple made by the bill betrays them. The disappearance of the wounded birds may have given rise to the belief of some old shooters here, that the diving ducks, or divers, as they are commonly called, when wounded, go to the bottom, and laying hold of some objects, such as sea-wrack, &c., die there!

Scaups are, excepting wigeon, the most numerous of all ducks in Belfast Bay.* They sometimes appear in very large flocks, and were particularly abundant in the great *Anatidæ* winter of 1837–38; three flocks of above a thousand birds each, and

* On the coast of Sussex also they are said to be so by Mr. Knox.

several smaller, could be seen at one view. So many of these birds as 10,000 are considered to have been seen together in the seasons of their abundance. The last date of their thus appearing was in the middle of February 1850.* One of these great flocks is described as rising from the water with thundering noise. They do not all rise at once, but, commencing at one end of the flock, gradually take wing, keeping up a continuous noise, which may be compared to that of *feu de joie*, until the whole are in the air: those which sprang first would be past the farther end of the flock before its time came to take wing. The noise kept by a multitude of these birds feeding in the little shallow pools exposed at low water on the sea-banks in the stillness of the night, is described as resembling the sound of a waterfall:—shooters hearing it on such occasions at the distance of more than half a mile have been tempted to go in pursuit of them. In the middle of February 1845, when scaups were remarkably plentiful, they appeared in thousands far up the bay, and remained there for some weeks.

I remarked from a steam-vessel proceeding towards Belfast, on the 29th of January, 1840, that when near a mile from the town, about 150 birds appeared ranged along the edge of the ebbing tide, like Grallatores. They looked white and brilliant as oyster-catchers, which they seemed to be, until on taking flight they were observed to be ducks, and the white marking at the base of the bill becoming apparent, proved them to be scaups: a short way from them was another flock of about 100, which, like the others, as they rose on wing appeared very beautiful. Their white aspect on the ground led me to believe that they were adult males; but the marking just mentioned being that of the old female and immature birds disproved this, and I subsequently learned that adult males were extremely scarce that season. The white appearance of the birds must therefore be attributed to a particular effect of light. Of forty-five of these ducks killed in the course of a week by three shooters at this time, there were about two

* They have appeared in a flock, covering the surface of the water to an extent, as was considered, equivalent to six English acres.

females to one male, and of this sex only one bird in full adult plumage.* At night, as is not unusual, they now came to the quays of the town, and among the shipping, to feed, though the weather was moderate. A fowler, having fired at a flock here from his boat on a moonlight night, imagined on rowing to the spot that great execution had been done, from the circumstance of between twenty and thirty birds rising to the surface about the boat, all of which he considered had been wounded; they had instead been simply feeding beneath, proof of which was soon given by their taking boldly to wing;—with the exception of four birds that had been killed. About a hundred scaup ducks have been obtained in a week during seasons when they were most numerous.

When scaups are near the shore, and shooters, having the wind in their favour, advance towards them in boats, they are sure of a shot, as, though the birds may not admit of a sitting one, they will fly back over the water, rather than escape from the shooter by flying over the land. In this respect they differ from wigeon and other species, as, indeed, they do generally in their avoidance of flying over land; if, for instance, proceeding up an estuary river, they will follow all its sinuosities, while the wigeon, &c., will take the shortest course by making direct to the desired point.

The scaup, though feeding by day, is a regular night-flying bird, as will be found noticed under Pochard, where also its mode

* The following note on this species appears in my journal. "*Belfast, Feb.* 20, 1839. I saw to-day in one shop eight, and in another seven scaup ducks, each number killed at one shot in the bay. They were all adult birds: five of the eight were males. Although I call these adults, the whole of the breast was not of a full black, but at its lowest portion some of them exhibited deep mottled brown. Its upper portion and the neck were black in all, and their heads of the rich full green colour." An experienced wild-fowl shooter and taxidermist, who has examined a great number of scaups in reference to the point, states, that he never saw young males display the white colour at the base of the bill, like old females, as they are generally described to do, but that birds of that sex were always deficient in the white, whereas females of every age displayed it. The irides of birds of both sexes and all ages he has remarked to be yellow. One instance, however, of a male scaup having white for one-eighth of an inch at each side of the upper mandible, but none of this colour above it, has been made known to me. This bird was just beginning, at the end of February, to exhibit a few of the light-coloured waved feathers of the adult male.

of feeding, in which both species participate, is mentioned. On looking to the stomachs of a number of these birds killed in the north of Ireland, chiefly in the locality now treated of, from November until March in various years, and in all kinds of weather, I have found that minute univalve shell-fish almost exclusively constitute their food. These are *Littorina littorea* and *L. retusa, Lacuna quadrifasciata, Rissoa ulvæ, Cerithium reticulatum,* and *Nassa macula.* One was filled with fragments of the bivalve *Nucula margaritacea,* and another contained a number of the seeds of *Zostera marina,* in addition to *Rissoa ulvæ,* this being the only instance in which any vegetable matter was found. Minute crustacea, as *Idoteæ,* &c., I have likewise met with;—large pebbles, even half an inch in diameter, are sometimes in them. Willughby remarks that this bird "is called the *scaup-duck* because she feeds upon *scaup,* i. e., broken shell-fish" (p. 365).

Wounded scaups (as has been remarked by Montagu) soon become familiar. An acquaintance, endeavouring to pet winged birds at different times, could not induce them to eat until a large vessel with water was introduced, into which their food was thrown, and then, on every occasion, they at once partook of it. He believed they would have died rather than take any food in a dry state. I have seen them a few days after capture follow persons round a pond for bread, &c.; and have been amused at their preference to diving for food, rather than taking it on the surface. When oats, for example, were thrown on the water, they dived after the odd grains that fell towards the bottom, instead of taking them off the top, where they floated in quantity.

Mr. R. Ball has supplied the following note:—"A scaup duck had a nest and about seven eggs, in the spring of 1843, at the Gardens of the Royal Zoological Society, Phœnix Park, Dublin; but I could not discover what male she was paired with; she sat for some weeks, until the eggs disappeared, probably having been stolen: I have seen her since occasionally. As this duck was able to fly, and there was no record of her being placed on the

pond, she may have come with other visitors, as the tufted duck and mallard, wild birds of which regularly take up their residence on the pond in winter."

The scaup is not approved of as food on either side of the Atlantic. Mr. Selby remarks, that "its flesh is rather rank and fishy" (p. 355); and Audubon characterizes it in similar terms. In Belfast, this bird is not esteemed, and the fowler sometimes cannot find a purchaser for it.

Montagu's remark (in his 'Supplement'), that the scaup is "rarely observed upon fresh-water," is applicable to the north of Ireland. It has not been brought to me from Lough Neagh, nor have I known it to be killed at any inland localities, though no doubt such rarely does occur. A small flock,—among which were several adult males,—was observed on Ballydrain Lake, on the 2nd of April, 1848.* It is said occasionally to visit Lough Beg, in Kerry, as well as the pochard.† I was told by the chief hawker of wild-fowl in Dublin, in December 1849, that he had never received it from inland waters, though nearly all the wild-fowl he disposes of are sent thence. In America, Wilson believes the scaup to be strictly a marine species; but Audubon met with it commonly on the rivers and lakes in the western parts of the United States.‡ This bird frequents suitable localities around the Irish coast; is noticed as rare in the north-west of Donegal,§ as met with on the coast of Dublin, Wexford, Waterford, Cork, Kerry, on which last it is considered to be very common,‖ and has been obtained at Achil.¶

The scaup duck appears to be about equally frequent in Ireland as it is described to be in England and the south of Scotland.

The American Scaup Duck (*Fuligula mariloides*, Vigors), about the specific distinction of which from the common scaup, ornithologists are not generally agreed, has a place in the British catalogue, from the circumstance of a single individual having been purchased in London market. Its name indicates the abode of this bird;—the European scaup duck is common on the coasts of North America.

* Mr. Darragh. † Mr. R. Chute. ‡ Vol. iii. p. 226.
§ Mr. J. V. Stewart. ‖ Mr. T. F. Neligan. ¶ Lieut. Reynolds, R.N.

THE TUFTED DUCK.

White-sided Diver.

Fuligula cristata, Steph.
Anas fuligula, Linn.

Is a regular winter visitant.

According to the testimony of an experienced fowler, it is the latest of the *Fuligulæ* arriving in Belfast Bay; even the month of December, in which he killed the first birds seen by him there in 1839 and 1840, being considered early. On fresh water, to which these ducks are partial, they appear earlier; — in the middle of November I have observed them on Ballydrain Lake, and have received specimens from Lough Neagh, among which were adult males, as well as young birds. They have frequently been brought to me from the latter locality from this period until April; December and January being the months in which they were chiefly procured. But I have known them to remain there until May, on the 4th of which I saw one, in 1850.

At the beautiful sheet of water—Ballydrain Lake—this species is seen to great advantage. The following one or two notes made by a friend relate to it there:—When the lake was frozen over on the 27th of January, 1833, in addition to a few wild ducks and teal, a number of tufted ducks (of which some were old males) appeared in company with pochards. During February, the tufted ducks continued there; and on the 3rd of March, a very warm day for the season, "twenty-six males, with fine crests and pure white sides, and twenty-five females with apparently no crests, brownish sides, and generally of a brownish-black colour, were congregated together." Above a dozen of pochards, too, appeared, with their bills concealed amid their dorsal plumage,—a favourite position of the *Fuligulæ,* when quietly resting on the calm waters of the inland lake or of the sea by day;—at full tide, in particular, they are generally thus seen, sleeping, or enjoying their rest after the toil of flight and feeding during the preceding night. There

were few wild ducks or teal; coots were as usual busied diving, but no grebes were visible, though looked for particularly all round the edges of the lake and islands. On the 15th January, 1837, I observed a large flock of diving ducks here, about fifteen of which were *F. cristata*, in adult male plumage, and about the same number old male pochards. It need hardly be remarked, that a pocket telescope was in requisition on such occasions.

The greater proportion of males than females of the tufted duck, pochard, and scaup, in Belfast Bay, has been particularly noticed by wild-fowl shooters, according to whom, the number of male tufted ducks to females has been fully as four to one; of pochards, four or five to one; and of scaups, nearly two males to one female. Male wigeon, too, exceed the females in number, but not as two to one.

Tufted ducks are much less plentiful in this bay than scaups and pochards, and in one season only were known to be as numerous as golden-eyes. They are chiefly in little flocks of from five to ten birds, so many as thirty or forty being very rarely associated, and when so, generally mixed with other species; on one occasion so many as 200 were seen in company. At twilight they fly, usually in little troops of from two to four, to feed on the sea-banks left exposed by the tide. At high water, they, with the other three species just named, occasionally approach the shore so near as to be killed from it. When crossing the Long Bridge at Belfast, on a frosty day at the end of January 1827, on my return from shooting along the shore of the bay, a flock of seven or eight ducks appeared on the river within shot of May's embankment. By hastening to the place I succeeded in killing a couple, which proved to be young birds of this species, with white feathers bordering the bill, as in the scaup, but to a much less extent.* This circumstance is mentioned on account of the alarm occasioned by it, and which proved a useful lesson. I had no dog with me, and, annoyed at seeing the dead birds floating down the stream, offered a reward to any boy of a party playing

* Old females, too, frequently exhibit white around the bill. Mr. Yarrell mentions his having seen a little white on one old female.

about, who would swim for and bring the ducks to land. One fine manly little fellow at once engaged to do so, and swam out boldly—perhaps more so than his strength warranted—until near the middle of the river; when, being almost within reach of the bird, he became faint, either from the cold of the water or over-exertion, and for some time I greatly feared for his safety. But his spirit was not to be beaten; he rallied,—at a few more bold strokes laid hold of both ducks, and returned safely with them to the shore.

In my young days, a duck, most probably of this species, came, in the month of October, to a pond at Wolf-hill, covering, perhaps, an English acre—I have obtained tufted ducks killed on still smaller ponds—and remained about a week. Such an occurrence being quite a novelty, the members of the family were so pleased watching the bird, that care was taken it should not be disturbed. The visitor then departed, and, as was feared, altogether; but not so, for it soon returned with two or three companions. After remaining for a short time, they all went off and reappeared in a day or two, when the number was increased to seven or eight, which continued there for two or three weeks. So persecuted are these poor birds almost everywhere they appear, that it is interesting thus to see how they avail themselves of a locality in which they are unmolested. A female bird of this species, kept in the pond at the Falls, with a number of other wild-fowl, was of a gentle, quiet disposition.

I am informed by Mr. R. Ball, that "three pinioned tufted ducks have been for some years on the pond at the Royal Zoological Society's Gardens, Dublin. They keep out as far from the sides of the pond as possible, and in winter are joined by a flock of from five to ten wild males and several females. Thirteen males have occasionally been counted; the females, being mixed with the various species on the pond, were not so easily reckoned, but appeared not to be so numerous. The wild birds stay four or five months. Last week (the communication is dated November 13, 1848) five arrived. They seem generally to be in pairs."

On the 17th June, 1834, a fresh specimen of a fine old male, killed near Lough Neagh, came under my inspection, and, from

its not having the slightest appearance of any previous wounds, suggested that it might possibly have remained there for the purpose of breeding. I could not learn whether or not a second bird had been seen.

On looking to the food contained in thirteen of these ducks, killed from November to March in different years, I found those from fresh-water to exhibit the seeds of several species of plants, remains of soft vegetable matter, insects of various kinds, among which were the *Notonecta*, or boat-fly, and some of the minute bivalve shells *Pisidia*. In one were four of the *Limneus peregeri*, full grown—shells and animals both being perfect;—frequently they contained seeds only. Those from Belfast Bay presented minute mollusca, *Rissoa ulvæ*, other *Rissoæ*, together with *Littorinæ*, and small shells of *Mytilus edulis*: all contained sand and gravel, in addition to the food.

The tufted duck is naturally subject to considerable changes of plumage until it attains the adult state. A specimen, exhibiting a singular departure from the ordinary appearance, killed on the Dublin coast, on the 20th January, 1838, was kindly sent to Belfast for my inspection, by Mr. H. H. Dombrain. The following comparative description of it was made:—

	Mr. Dombrain's bird.		Adult specimen of *Fuligula cristata*.	
	in.	lin.		in.	lin.
Length (stuffed) total . . .	17	0	(stuffed also)	17	6
——— of wing	8	3	. . .	8	3
——— bill above, from central point, not reckoning curvature .	1	7½	. . .	1	7½
Length of bill to rictus . . .	1	11½	. . .	2	0½
——— tarsus	1	4	. . .	1	4
——— middle toe and nail .	2	3	. . .	2	4½
——— outer toe and nail . .	2	3½	. . .	2	4½
——— inner toe and nail .	1	10	. . .	1	11
——— hind toe and nail . .	0	8	. . .	0	9
Height of bill at base . . .	0	9½	. . .	0	9½
Breadth of upper mandible at nostrils	0	8½	. . .	0	10
Greatest breadth of upper mandible between nostrils and point	0	9½	. . .	0	10½

In the characters which come under "FORM," this bird differs only from *F. cristata* in the shape of the upper mandible, which is narrow generally, and increases more in breadth towards the point.

COLOUR. In several points of view it appears the young male *F. cristata* assuming in part the adult plumage, which the next moult would have rendered complete. It has the entire head and neck, except in the following particulars, marked with the green and violet or purple reflections of the tufted duck, though less bright, also the crest only partially developed; the exceptions are that the throat is pure white for an inch from the base of lower mandible; and that, about $2\frac{1}{2}$ inches from upper surface of head, the neck is surrounded (except for four lines at the back) with a pure white collar about a quarter of an inch in breadth. This collar is not exactly transverse, but rises higher in front than elsewhere. Plumage of the back, rump, and tail only differing from that of *F. cristata* in being less dark in general hue. *Wings* differing only in the primaries and greater coverts, and in the latter on the left wing only, but here in a remarkable manner. In the right wing the first five primaries are pure white including shafts, the sixth has white down its centre on the inner web only, the succeeding are of the ordinary colour of those on the old male tufted duck; in this wing the greater coverts are *black*. In the left wing the greater coverts are pure *white*, including shafts; the first three primaries are pure white, including shafts; the fourth, fifth, and sixth pure white, except the shafts and a narrow line of black on either side of them, which is carried to the point; the succeeding ones are entirely dark at the tip, but above it, as in the right wing, are of a dull white on the outer web, like that of the old male *F. cristata*. The entire breast and the under parts have the plumage partly of the immature, and partly of the mature male tufted duck,—in this respect just like the head. The colour of the bill differs only from that of *F. cristata* in having the nail of the under mandible white, and a considerable part of this mandible pale horn-colour. The legs and feet differ in colour from those of the tufted duck in being generally of a rather paler hue; in having the outer nail on both feet white and pale horn-colour, and a blotch of white on the adjoining web; this latter marking, too, being present on both feet towards the margin of the membrane connecting the middle and inner toes.

February 19, 1838.—I received the trachea of an adult male *F. cristata*; and, on comparing it with Mr. Dombrain's sketch of that taken from his bird, found them quite identical in form.

The irides of a few specimens examined by me were bright gamboge-yellow in the adult male and female, and in the latter, when immature, brownish-yellow.

The tufted duck is considered rare on the north-west coast of Donegal.* In the little inland lakes of the county Armagh, it is the most common species of duck during winter, and remains until a late period of the spring; as many as fifty may sometimes be

* Mr. J. V. Stewart.

seen together on very small sheets of water.* They are called *white-sided divers* there, and considered very bad for the table;—being sold as wigeon, they bring this excellent bird into bad repute.† Tufted ducks are sent in quantity from various inland localities to Dublin market, and have been obtained about Clonmel.‡ Along the eastern coast in particular, they are numerous; two hundred having been seen in company in Carlingford Bay; in the bays of Drogheda and Dublin, and in Wexford harbour,§ they are common; are obtained in the harbours of Waterford and Cork, and on other parts of the coast, but apparently become more rare westward. In Kerry, the tufted duck was unknown to Mr. T. F. Neligan in 1837; and but one bird obtained there —(at Rossbegh, Dingle Bay)—had been seen by Mr. R. Chute until December 1849. It is common on lakes in Mayo.‖ Its scarcity in the south-west of Ireland accords with what we find to be the case in the south-west of England. The Rev. George Robinson informs me that, during four years' residence at Plymouth, he never saw one either in the market or in a wild state, but that he had known of two or three having been killed there within that time. Its frequency in Dublin, where he resided for the three following years, was therefore quite striking, as the tufted duck is very commonly brought to the market there during winter. In Couch's 'Cornish Fauna,' this species is set down as "scarce;" but in the south-east of England, as in the same part of Ireland, it is common, being "almost as abundant as the scaup" in Sussex.¶

It is said to visit Orkney every winter, but does not appear in Mr. St. John's list of the 'Birds of Sutherland.' During the month of January 1849, I remarked a few of these birds (some

* Rev. Geo. Robinson.

† Mr. Yarrell, on the contrary, remarks that, unlike the scaup, "its flesh is generally excellent, so much so, that from its goodness this bird is sometimes called the black wigeon."

‡ Mr. R. Davis, jun., who has also procured the species from Dungarvan, on the coast of Waterford.

§ Called gold-eye duck, here, by the shooters (J. Poole).

‖ Mr. R. J. Montgomery. ¶ Knox, 'Birds of Sussex.'

of which were adult males) frequenting two small lakes in the moor above Ardimersy Cottage, in the island of Islay, where they are well known, by the name of "douckers." The tufted duck is not found on the eastern shores of North America.

THE LONG-TAILED DUCK.

Harelda glacialis, Linn. (sp.)
Anas „ „

Is an occasional—probably a regular—winter visitant to the coast of Ireland in very limited numbers.

The first published notice of its occurrence that I have seen, was made by Mr. J. V. Stewart, in his paper on the 'Birds, &c., of Donegal.' This appeared in 'Loudon's Magazine of Natural History' for 1832 (vol. v. p. 584), where it is remarked: —"[December 4, 1832 ?] I got a specimen of *Anas glacialis* a few days since; the first I have met with in this country. Though with nearly the perfect plumage of the female, and without the the long tail-feathers, it proved on dissection to be a male." The species had, however, been known to Mr. John Montgomery some years previously. In his journal of January 27, 1823, he states having, on that day, purchased a female bird which was shot at Killileagh, Strangford Lough; and under the date of November 8, 1824, is a notice of another female having been killed near the new market, May's ground, Belfast. The following notes relate to individuals since met with in

Belfast Bay.

December 20, 1837.—I purchased a long-tailed duck to-day, one of two seen in company yesterday at Garmoyle, where it was shot; the other is described as having had less white in its plumage.

	in.	lin.
Length (total) of specimen is . . .	15	0
——— of wing from carpus . . .	8	0
——— of bill above	1	0
——— of bill to rictus	1	9

	in.	lin.
Length of bill to tarsus . . .	1	3
——— of middle toe	1	10
——— ——————— nail . . .	0	$3\frac{1}{2}$
——— of outer toe	2	0
——— ——————— nail . . .	0	$2\frac{3}{4}$

Colour of irides very dark-brown; pupil dark bluish-black; upper mandible dusky, except from nostrils to base, where it is of a dull leaden-blue; lower mandible of a similar colour except the tip, which is dusky. Base ("plante") of feet and back of legs black, of which colour also are the webs on the upper side; tarsi and toes of a pale bluish lead-colour, which also prevails in a longitudinal line on each side of the toes, thus giving the feet a very handsome appearance, resembling that of the gannet. Tail-feathers fourteen in number. On dissection it was found to be a female.

With the exception of two pebbles and five or six of the *Rissoa labiosa*, the stomach was entirely filled with full-grown specimens of *Lacuna quadrifasciata*, of which many were perfect.

November 12, 1838.—H. Bell, who killed the individual just noticed, saw another similar one in the bay, when out in his boat looking for wild-fowl. It allowed him to approach so near that with his oar he pushed it under water, where, becoming entangled in a mass of sea-weeds, the bird was captured; he could not perceive that it was in any way wounded. The wings being fixed so as to prevent its escape, the duck was laid in the bottom of the boat, where he was quite captivated by its tameness, evinced (to use his own expression) "by its going swattering with its bill into the little water that lay in the bottom of the boat." He regretted the want of bread to give it, believing that the bird would have eaten from his hand. So pleased was he with his captive, that he set it at liberty lest it should be injured by any one;—a great stretch for a man who earns his livelihood by wild-fowl shooting. He would have taken it to the taxidermist, whom he supplied with all rarities, but was afraid the latter would kill it. The next day he was grieved to find the poor bird, not far from the place of its liberation, lying dead, with its eyes picked out, and the body partly eaten, no doubt by some of the larger species of gull.

November 6, 1839.—A long-tailed duck, which was alone, was

shot near the Long Strand. It is an adult female, and agrees with Jenyns' description of that sex. The bill and legs are coloured as in the specimen of December 1837. Its stomach was about half filled with gravel and fragments of *Mytili* and *Rissoæ*. *October* 31, 1840. Two of these birds were seen in company, to-day, off Adam's Point, one of which was killed and the other winged. They were remarked to be extremely expert at diving,—as much so as the golden-eye. The former was an immature male; its stomach contained different species of *Rissoa*, small specimens of *Cerithium reticulatum*, and fragments of stone. *November* 13, 1843. Two long-tailed ducks were shot in the bay in company with golden-eye ducks, the first time they have been observed here associated with any other species. On the 18th of this month one was obtained at Adam's Point, in a different (younger?) state of plumage from any I had previously seen, and which proved on dissection to be a female. The stomach was filled with small crustacea (*Gammaridæ*) and testaceous mollusca;—three of *Nucula margaritacea* and several of *Rissoa ulvæ*. *December* 21, 1844. Two of these birds, which admitted of a close approach, were seen in the bay, at this date, and likewise for some days before, by Richard Flack. Just after having fired at godwits he pushed his boat over the spot where they had been, they having dived rather than take wing when the fowler thus came to close quarters with them. Neither was an adult male; but a third one, seen with them, though not satisfactorily, from its always flying off when nearly approached, was, from that reason, believed to be an old bird. It always returned to the others when the alarm was over. *October* 21, 1847. A young male was shot near Ballymacarrett, and only the one seen. Its stomach contained *Rissoa ulvæ* and the remains of shrimps (*Crangon vulgaris*). *December* 27, 1848. A beautiful specimen of the adult male was shot in the bay. Coming under my inspection when quite recent, I noted it as fully agreeing with Yarrell's description of the bird in this plumage, except in the following characters:—

Bill: the nail, and half of the side of the upper mandible next its base, black,

while the whole upper surface and anterior part of the side were of a deep rose-colour. Irides very light yellowish-hazel. Cheeks and ear-coverts pale greyish-drab, except a small space of pure white margining the eye. Forehead pale grey, which colour also extends round the throat, and continues downward so as to margin the entire inner or lower side of the dark chestnut-brown patch on each side of the neck. Central line of lower part of throat, between the two approximating edges of the chestnut patch, white. Top of head very pale buff. Back and lower part of neck all round pure white, which colour extends down between the "shoulders." Scapulars and sides beneath the wings, or "flanks," pale slate-colour. Entire breast dark chestnut-brown, of the same hue as the patch on the head. Belly and under tail-coverts, white. *Tail-feathers*: two outer pair pure white; the three next, with a dark longitudinal line near the centre, becoming gradually broader in those approximating the middle of the tail. The second longest pair all black, except a narrow line of white on each side of their basal portion. The longest pair wholly black. Tarsi and toes very pale lead-colour; webs greyish-black; nails blackish.

	in.	lin.
Length, from point of bill to end of longest tail-feathers .	22	0
——— of wing from carpus	9	0
——— of bill from rictus to point	1	7
——— ——— forehead to end of nail . . .	1	1
——— of tarsus	1	3
——— of middle toe and nail	1	6
Longest tail-feathers exceed the others	3	3
Next ,, ,, ,, ...	1	6

Its stomach contained only a *Rissoa ulvæ*. This specimen came into the possession of Capt. Bradshaw, R.N., of Holywood; I purchased all the others.

Most of the preceding birds appeared in the estuary within a mile of the town, and all of them within three miles of it. I have never known them to be driven here by severity of weather, under the influence of which alone they are said to visit the coast of Sussex.* October, November, and December, have hitherto been the months of their visits, and they have chiefly been immature. The statement of Wilson and Audubon, (when writing of this bird as a North American one,) that the species lives chiefly on shell-fish, has been corroborated by an examination of the food in the individuals just noticed, in which both univalve and bivalve forms were found. The latter author (vol. iv. p. 103) gives

* Knox.

an interesting account of a whole nursery of young birds that came under his observation.

In March 1834, I was informed by Mr. Glennon, of Dublin, that he had at one time received two fresh specimens of the long-tailed duck from Wexford; and subsequently, a sportsman resident in that town mentioned to me that he had known this bird, as well as the pintail, to have been killed in the harbour there. In *Saunders's Newsletter* of February 13th, 1835, it was said that Sir Hussey Vivian, on a late sporting excursion on the estate of Sir Robert Gore Booth, in the west of Ireland, had shot the *Anas glacialis*—which was correct:—the specimen was seen by some of my ornithological friends. Mr. H. H. Dombrain informed me that a fine male bird, sent to him in December 1836, was caught at Lurgan Green (county of Louth) when asleep, by a little girl, who stated that there were two of them, and that she chose the prettier one with the long tail—the other had been a female or young male. The same gentleman announced a female bird as having been shot at Malahide, on the Dublin coast, at the end of November 1840, in company with a gadwall. Another was killed there in the early part of the winter of 1843.* I have seen one which was stated to have been found dead on the beach of Dublin bay on the 27th of October, 1846, where, in the winter of 1847–48 and in December 1848, single individuals were also obtained;† the last was a female;—the three were immature. At the end of February in the last-named year, a fresh specimen of an adult bird was purchased in Dublin.

An old male from the Galway coast, said to have been killed in the month of August, has come under my notice.‡ Three of these ducks were killed in Drogheda Bay in the winter of 1848–49, and in the month of March of the latter year an adult male was seen there by Mr. R. J. Montgomery, and twice fired at by

* Rev. Geo. Robinson. † Mr. R. J. Montgomery.

‡ In the collection of Mr. J. Watters, jun., Dublin. I am informed by the Rev. G. Robinson that an immature bird was shot so early as in the month of August (1841?) in Plymouth Sound, by John Getcombe, Esq. The species is very rare there at all times.

him, but unsuccessfully. This species, according to Mr. R. Chute, is an occasional winter visitant to the coast of Kerry; an "old pair" shot in Dingle Bay is in his collection.

The preceding notes indicate that this beautiful species is rather rare on the coast of Ireland, which it visits in very limited numbers, as it does the coast of England generally, though it is common on a great part of that of Scotland, increasing much in number northwards. Very interesting accounts of its habits there are given in St. John's 'Wild Sports of the Highlands' (p. 131); and in the 'Zoologist' (vol. vi. p. 2292) by the Rev. James Smith, as observed by him near Banff. The late Mr. G. Matthews, on his return from Norway, reported these birds to me as plentiful all along the coast, particularly at Bergsfiord, Tromsoe, and at a large island near the latter place, called Dyroe. He once killed ten with one barrel, and three with the second, out of a large flock, and with No. 7 shot; this supply came very opportunely, as his party were at the time "hard up" for food. September and October were the months in which the greatest number of these birds were seen there.

The Harlequin Duck, *Clangula histrionica*, *Anas histrionica*, Linn. (sp.), not yet met with in Ireland, has, in a few instances, been killed on the coast of Great Britain, at widely different localities, on each side of the island, as the Orkneys and Devonshire,* Norfolk and Cheshire. On the 10th and 11th of July, 1849, a flock, consisting of four adult males, was seen by Captain May on a lake close to the entrance of the Salten Fiord, Norway. He and his party, wishing to obtain them for specimens, went in pursuit, and tried for a long time to get a shot, but in vain, owing to the wildness of the birds. France and Germany are the two most southern countries in Europe, named in Yarrell's work as visited (and very rarely) by this bird. One individual is recorded in De Selys' 'Fauna of Belgium' (p. 147). It is a northern species of the European and American continents.

* According to Dr. R. Battersby, of Torquay, a small flock frequented the bay there during the winter of 1846–47, from which he procured a male and female.—'Zoologist,' vol. v. p. 1697. A few odd birds had previously been obtained on the southern coast of Devonshire (Yarr.)

THE GOLDEN-EYE DUCK.

Morillon (female and young males).

Clangula vulgaris, Leach.
Anas clangula, Linn.
Anas glaucion, Linn. (females and young males.)

Is a regular winter visitant to the coast and inland waters.

Belfast Bay.

This bird is late in arrival here after the breeding season, the 5th of October being the earliest date known to me. It remains generally the latest of the migratory ducks in spring, occasionally until May:*—on the 1st of June, 1840, a couple frequented a particular part of the bay. This species exhibits its partiality for fresh or brackish water by feeding chiefly in the creeks—or "gullets," as they are here called—at extreme ebb, and but rarely at the margin of the flowing tide. It does not, like the wigeon and other ducks, frequent the banks exposed at low water as feeding-ground, nor does it, like them, fly at dusk; it is a day-feeding bird.

Golden-eyes come to the bay every season, and their numbers are not considered to be increased by severe winters. They are less numerous than the scaup, are particularly given to diving, and more expert at it than either scaup or pochard. They are wilder than these and the other diving ducks, and difficult to be approached within range even of the swivel-gun. They generally keep by themselves in little parties which rarely come near the shore; but in very fine weather I have not unfrequently known single immature birds to be killed from the road bordering the bay. Occasionally, however, they associate with other species: of eight ducks killed at a shot on the 30th November, 1838, there were five

* At Ballydrain lake, three birds, females or young males, were observed on the 30th of April, 1848: on the second of which month, in the following year, a flock of six adult males was there.

scaups, two pochards, and one golden-eye; and several times during the ensuing month of December, the three kinds fell at one discharge from a swivel-gun. They appear in flocks of from fifteen to forty birds, but much more commonly in smaller numbers. So many as from 150 to 200 golden-eyes, unmixed with any other species, have occasionally, but very rarely, been seen together; these large bodies do not come so far up the bay as the other diving ducks. Towards the end of January and beginning of February 1845, flocks containing about a thousand birds, of which the only species positively recognized were old male golden-eyes—and all may have been of this species—were frequently observed off Cultra quay. The beautiful adult male is much less frequently procured than the females and immature birds—not more than one for twenty of the latter. Sometimes none at all, and generally a few only will be seen in the largest flock. They are rarely here early in the season, but in the winter ending the year 1838, when the species was particularly numerous, several of them were procured by one of the wild-fowl shooters, in the months of October and November, before there had been any frost: the weight of one of these (a fine bird) was 2 lbs. 5 oz.* Of four golden eyes, killed at a shot here (December 18, 1847), two were adult males,—a circumstance mentioned on account of the rarity of two falling at the same discharge.

Wild-fowl shooters remark that scaups, pochards, and tufted ducks never dive from the flash of the flint or percussion gun until wounded and unable to fly away; but the golden-eye occasionally dives from both before being wounded. In one instance, an old male, fired at with a percussion gun from a distance of about twenty yards, dived before the shot could reach the spot; and its emerging and flying right off from the bosom of the deep were the act of the same instant. It is difficult to obtain any of these diving ducks when wounded, and most of all the golden-eye,

* The male is considered by Mr. Darragh as not attaining full size until it exhibits adult plumage.

so that the experienced fowler will rarely bestow time on the pursuit.

A wild-fowl shooter, who spent the first week of March 1847 at Strangford Lough, following his vocation, saw this species only of the diving ducks. They appeared, at low water, about the rivers which take their course through the shallower parts of the lough, and at high water came from the lough proper into the sandy inland bays on the surface of the flowing tide. They are often called here *fresh-water wigeon*. *Popping wigeon* is a name for them (and the red-breasted merganser) in Drogheda Bay;*—the golden-eye "pops" down or dives so suddenly, that the adjunct is very characteristic.

As the golden-eye seems to have a partiality for fresh-water, it is, as may be expected, a constant inhabitant of Lough Neagh during its sojourn in Ireland. On this vast lake, and on the river Main, which joins it after flowing through Shanes-Castle Park, where its banks are most richly and beautifully wooded, I have seen splendid adult males to perfection, and, in addition to their personal beauty, have been attracted by the fine ringing sound of their pinions through the air. That some idea might be formed of the relative numbers of different kinds of ducks shot on Lough Neagh, I engaged a man living on its banks, who brought them on sale to Belfast, to call on me regularly with his stock, during two or three winters. In this manner I ascertained that more of the golden-eye were procured there than of any species: among those brought frequently from the 5th of November to the 6th of April (the earliest and latest dates) were several adult males. The other kinds were tufted ducks, pochards, wigeon, wild ducks, teal, pintails, and goosanders; but one individual only of each of the last two species. The golden eye is commonly shot here from the beach after the manner described by Colonel Hawker and Sir William Jardine. To use the words of the former author — "If you see a single curre

* Mr. R. J. Montgomery.

[golden-eye] by day, when he *dives* you must *run*; and the moment he *comes up, squat down*. So you may go on till within ten yards of him, and then stand ready to shoot him as he flies up, which he will do on coming up again and seeing you suddenly appear so close."* The only difference in Sir W. Jardine's observations, is, that he has in this manner approached within shot of several "curres" diving simultaneously.† This is also a Connaught practice. Of the golden-eye on inland waters there, it is remarked by a correspondent—"They appear rather early on the rivers, and feed in the shallows and fords. There is a peculiarity in the whole flock diving simultaneously: I have many times remained at a distance until they were all down, and then had a run for it, and been within range when they came up. They are not so plentiful as the pochard."‡ I remember being once much amused by witnessing from Ormeau Bridge, over the Lagan, near Belfast, a simultaneous operation of the kind described, on the part of four golden-eyes. They were close to the edge of the river, and so extremely busied feeding as to be generally quite beneath the water, though, from its shallowness, hardly requiring to dive. Their appearance at the surface was so momentary that they evidently came up only to breathe, and the rapidity with which they *en masse* went beneath it again, was almost ludicrous: the rapid curling of the water above them betrayed of itself a busy scene beneath.

The golden-eye occasionally resorts to very small ponds as well as rivers—an attack made on one that unfortunately visited a pond at the Falls will be found noticed in the first volume of this work, under Peregrine Falcon.

The food observed in several of these ducks examined by me in different years from November to March was various: six procured on fresh-water exhibited the remains of subaquatic plants, seeds, insects and their larvæ, together with entomostracous crustacea of the genus *Cypris*—of five killed on the sea (Belfast Bay) one included a shrimp with the remains of other crustacea; a

* 'Instructions to Young Sportsmen,' p. 310, 6th edit.

† 'Brit. Birds,' vol. iv. p. 152. ‡ Mr. G. Jackson.

second, some *Idoteæ*, a *Littorina littorea*, and a few fish-scales;* a third was entirely filled with *Idoteæ*.† A fourth (an adult female shot at the end of January 1849) contained 218 beautifully perfect and fresh-looking shells of *Lacuna quadrifasciata*, and 19 equally fine and perfect ones of *Rissoa labiosa*, all the specimens of both being full-grown or nearly so. Besides, there were above a dozen of *Montacuta purpurea*, and single specimens of our two common species of *Littorinæ*. A number of broken shells of the two first-named species were also present. An adult male bird, killed a few days afterwards, exhibited a mass of decomposed shells. They all contained sand or gravel. In a bird brought from Westmeath to Dublin were (according to Dr. C. Farran) several species of fresh-water shells, above twenty of *Limneus pereger* (nearly all the variety called *Galnaria lacustris*, by Dr. Leach), a *Limneus fossarius*, with *Ancylus fluviatilis*, and *Neritina fluviatilis*; there was likewise some vegetable matter. A correspondent mentions, as favourite food of the golden-eye, very small leeches (*Hirudines*), with which he has found the bill filled.

The golden-eye is widely spread over the coasts and inland waters; is common in the north-west of Donegal;‡ in Dublin Bay; and is frequently brought from inland localities to the market of the metropolis,—old males, however, being very rarely seen there. According to Mr. J. Poole, this bird is plentiful during some winters in Wexford harbour. On the 11th of February he once noted, in reference to this place:—"The golden-eyes are now to be met with in small parties of eight to twenty or more. They

* This is the only instance in which I have observed the remains of fish, of which, Mr. Yarrell remarks, their food principally consists. This varies, of course, in different localities. The scaup and tufted ducks are also mentioned by this author as feeding on small fish, the remains of which I have never met with in them, and rarely are they found in any species of duck in the north of Ireland, exclusive of the genus *Mergus*.

† The mention of these crustacea reminds me of Audubon's having witnessed the extraordinary partiality of some of these birds to a certain locality in a North American river, and ascertained by shooting some of them that the attraction was cray-fish. A full and interesting description of the habits of the golden-eye will be found in the 4th volume of this author's 'Ornithological Biography,' p. 320.

‡ Mr. J. V. Stewart.

scarcely cease diving and splashing about, sometimes the whole company being down together, but remaining below only a very short time. They will allow a small boat to approach within about 200 yards, but, after having got so near, you may expect to see some at least of their number, with much splash and splutter, taking their flight, while the sharp ringing of their wings makes assurance doubly sure that they are on the look-out for more secure and agreeable quarters. Their food is small univalve shells." On the coasts of Waterford and Cork this duck is found, but is not now considered common in the harbour bearing the latter name; and is very rare in Kerry;—a couple killed on the the lakes of Killarney are in Mr. R. Chute's collection. One correspondent of much experience terms the golden-eye common on the inland waters of Connaught, and another mentions a magpie diver*—so called from being pied with black and white, and probably this species—as frequenting Lough Conn and the River Moy, where he has often seen moor buzzards "stoop" to them when on the water.† The author of 'Wild Sports of the West' remarks, that he "noticed the golden-eye upon the estuary." Sir Richard Levinge, writing to me from Knockdrin Castle, county Meath, in October 1838, stated that many morillons and golden-eyes were on the waters there in the preceding winter. The species is said to be common on the River Shannon, near Portumna.

Judging from what is said of the golden-eye in England and Scotland, it is perhaps equally numerous in Ireland as in those countries.

The Buffel-headed Duck, *Clangula albeola*, *Anas albeola*, Forst., not known as having ever visited Ireland, is positively recorded in the British catalogue, from one individual having been obtained at Yarmouth, and another in Orkney (Yarrell, 1845). It is a common North American species.

* This is a name for the smew in England.

† Mr. B. Ball.

THE SMEW.

White Nun.

Red-headed Smew and Lough Diver (females and young males).

Mergus albellus, Linn.

Is a very rare winter visitant to the north; but an annual one to some of the central parts of the island.

A similar difference prevails, not only between Scotland and England comparatively, but between the northern and southern parts of the latter country. Sir William Jardine remarks:—"In Scotland it can only stand as an occasional straggler,"* and Mr. Selby observes:—"In severe winters the smew is not uncommon in the eastern and southern parts of England: * * * in the northern counties it is always of rare occurrence."† Montagu, in the Supplement to his work, says of the smew:—"This is by far the most plentiful species of merganser that frequents our coasts and fresh-waters in the winter;"—it will be remembered that he wrote from Devonshire.

In the north of Ireland, this bird is instead "by far the *rarest*" of the three species of *Mergus*. To Mr. Templeton it was altogether unknown as a visitant to the island; nor was it recorded as such until I noticed it in the 'Proceedings of the Zoological Society of London' in 1834. The first specimen which came under my inspection was a beautiful adult male, shot about the Long Strand, Belfast Bay, in the winter of 1829–30. About the last day of February, 1832, two were seen on a river called the Six-mile Water, near Doagh, county of Antrim, and one (an old male) killed. In August 1836, the gamekeeper at Tollymore Park (Down), described a bird to me which he had shot on the river there in winter about five years previously, that must have been a female smew in adult plumage. A specimen obtained about this period was said to have been killed in the

* 'Brit. Birds,' vol. iv. p. 175. † Vol. ii. p. 386.

county of Monaghan. At Lurgan Green, county of Louth, a male bird was procured* in the winter of 1832–33(?).

The following information was acquired in Dublin. In the winter of 1814, an adult male (of which a beautiful drawing was made by Miss Battersby) was shot near the city. A bird in similar plumage was killed there in December 1828, and, at the end of the following month, another old male and two females, which I saw, were procured about the river Shannon, and sent to the metropolis to be preserved. In the winter of 1829–30, two smews were shot at Dalkey, Dublin Bay. Mr. W. S. Wall, bird-preserver, told me of his having received one of these birds on the 14th December, 1835, and that the smew is brought to the market of the metropolis every winter; Mr. Glennon, also, who, for many years, has followed the business of taxidermist there, informed me that he received about five or six smews to set up every winter, as many as are sent to him of the shoveller (*Anas clypeata*), and hence he believes these two species occur in about equal numbers. Mr. Dombrain reported the following to me from Dublin:—"January 1837, a smew in the market; January 20, 1838, four in the market, three males and one female; middle of February, same year, obtained a young male;" at a later period of the season he remarked that, although smews were plentiful that winter in Dublin market, he had not seen a *Mergus serrator* there. In the winter of 1837–8 Mr. Wall purchased fourteen smews, and saw several more; three which he preserved were adult males. On the 23rd of December, 1844, an old female bird was obtained; in December 1846, a female and young male were on sale together; and, one day in December 1847, five appeared, three of which were old males: a very fine bird in this plumage was brought there in March 1849. At the end of this year I was informed in Dublin by two persons (neither of whom has been previously alluded to in connection with the species), that a few smews are brought from inland localities to the market of the metropolis every winter.

In the collection of Mr. T. W. Warren there is a smew which

* Mr. H. H. Dombrain.

was killed at Wexford, and this gentleman, on the 24th February, 1838, saw four of these birds which were brought from that county:—this winter will be remembered as remarkable for the occurrence of the *Anatidæ* in great numbers. The species has been procured at Waterford. It must become more scarce westward, not having been included in the 'Fauna of Cork,' and being unknown to my correspondents as a visitant to Kerry.

This falling off westward in Ireland is interesting, the smew being more a bird of eastern than of extreme western Europe. It is considered a very rare and accidental visitant to the eastern coasts, &c., of North America. Mr. Selby observes that "the majority of such as visit our shores are females, or immature males, in similar plumage; * * * the male, in his mature garb, being comparatively seldom met with" (p. 386):—of the Irish specimens, which have come under my cognizance, there were fully as many adult males compared with the others as I should expect to find among the smew population.

In Ireland, this bird is much less common than in England, but more so than in Scotland.

THE HOODED MERGANSER.

Mergus cucullatus, Linn.

Has once been obtained,

In winter, about the year 1840, at Dingle Bay on the coast of Kerry, by Dr. Chute.*

This bird was first known to visit England in the winter of 1829, since which period two others have been obtained there, and one on the coast of Wales (Yarr. 1845); none, as yet, have been met with in Scotland (Jard. Macg.). The hooded merganser is a common North American species, of which the individuals that have visited Europe must be considered as stragglers.

* Mr. R. Chute.

THE RED-BREASTED MERGANSER.

Scale Duck (north of Ireland).

Mergus serrator, Linn.

Is indigenous in Ireland ;

But, as in the instance of various other species which breed here, the numbers are greatly increased in winter by migration from the north. Sir William Jardine observes, that it is a winter visitant to the south of Scotland, and is not nearly so common on fresh-water at that season as the goosander.* Mr. Selby remarks that, "upon the Northumbrian and other coasts of the north of England, this species is a regular winter visitant" (p. 379); and Montagu, in the supplement to his work, states that "this may be considered a rare species in the south of England." The red-breasted merganser thus appears to be, in Great Britain, the reverse of the smew;—more common towards the north, and rare towards the south of the island. According to the information supplied by my correspondents in the south of Ireland, the red-breasted merganser is also more common in the north than there.

The *M. serrator* breeds on some of the islands in Strangford Lough. An old sporting friend, many years ago, obtained from a nest there, eleven eggs, and placed them under a muscovy duck, by which, in from six to eight days, they were all "brought out," having, of course, been partially incubated by their proper owner previous to their abstraction. The young all lived until they were able to fly away, when they made their escape, my friend not wishing to retain them after he saw that they were *scale-ducks* instead of shell-ducks, whose eggs he thought had been procured. These young birds are said to have cleared all the waters, within a mile of their birth-place, of fishes and frogs. A very graphic account is given of their activity in scudding along the surface of the water, as if it were land, when they saw a fly alight,

* 'Brit. Birds,' vol. iv. p. 181.

and of the great rapidity with which they ran and dived. Although their foster-parent was very assiduous in her attention to them, they proved, after the first three days, quite indifferent to her; came to the yard with the poultry, and ate potatoes freely. When visiting the islands of Strangford Lough, on the 20th and 21st of June, 1832, I saw two pair of these birds, each pair flying in company. The species was said, by intelligent farmers who accompanied us, to breed here, on Island Mahee, Island Reagh, and Scatrick. One of our party had often found their nests, which he described as situated in "scroggy" places, or where there is some short, thick brushwood: when he has approached the nest, in the absence of the parent, the young birds have left it, and run towards him. The name for these birds, here, is *scale-duck*, which my friend, as has been stated, believed to apply to the shell-duck, when he sought to obtain the eggs from this locality. The birds noticed under Goosander (the next species to be treated of), by the latter of the two names, and said to breed about the river Shannon, are probably *M. serrator*. Sir William Jardine remarks, in one of the excellent notes to his edition of Wilson's 'American Ornithology,' that:—"In Hudson's Bay (according to Hearne) they are called shelldrakes; the name by which they are also distinguished by the common people in all the rivers of the south of Scotland" (vol. iii. p. 90). Audubon, too, informs us that "the red-breasted merganser is best known through the United States by the name of shelldrake" (vol. v. p. 93).

I have met with the red-breasted merganser in Strangford Lough different times in summer since the date last mentioned; but it will be sufficient to give the following observations, made by Mr. J. R. Garrett in 1849. He remarks:—"On the 3rd of June I saw three pair at Island Gabbogh. The boatman (who is a shooter in winter and a fisherman in summer) showed me a spot on the island where he had, two or three years ago, caught a 'scale-duck' on her nest, containing twelve eggs. On the smaller Bird Island I saw another pair of mergansers, but could not find their nest. At Chapel Island I discovered a nest of

this species, containing two eggs, on the 6th of June. It was situated under a closely-matted briar [*Rubus*] or rather mass of briars, on the sloping side of a hill, about thirty yards from high-water mark, and was very carelessly constructed, the materials being merely fragments of the decayed briar and withered herbage, with a few downy feathers. The eggs were almost wholly concealed by these substances. The pair of mergansers were flying about the island when we landed. We saw another pair on the Lythe Rock, but searched in vain for their nest."

A friend, boating on Lough Neagh, near Toome, about twenty years ago, saw one of these birds fly closely past him several times, and, on his landing upon a small island, he discovered its nest, containing many eggs. When I was at Shanes Castle, on the banks of this lake, on the 28th of July, 1833, a female merganser "pushed out" from the shore with her six young, which were about the size of three-weeks-old ducklings. The parent kept considerably ahead of her progeny, no doubt to induce them to follow with celerity, which they did for only a short way from the beach, and then collected into a close little group, displaying by their gestures the greatest affection towards each other: all this time the old bird continued to retreat. On the 29th of May, 1836, I again saw at Lough Neagh, but at the opposite side, three old birds. In these breeding localities I believe that the species remains permanently, and that the individuals seen upon the coasts, except in weather so severe as to drive them from inland waters to the sea, are migratory birds. They seem to frequent Belfast Bay chiefly when migrating southward in early winter and northward in early spring—thus to be of "double passage;"—they are considered to be more common at these periods than in mid-winter.

My notes on them here are:—March 1831, two killed. April 9, 1838; two beautiful specimens shot in the bay, both in the plumage of Bewick's red-breasted merganser, with two black stripes across the white on the wing; a third was in company with them.* September 20, 1837;

* Major T. Walker remarked in a letter to me respecting Bewick's figure, that it does not represent the crest as this usually appears. In birds which he had living,

three obtained. Nov. 7, 1838; four killed at a shot; one having caught a fish, the others flocked to their apparently more fortunate neighbour, and thus all fell victims: on examining the stomachs of two of these, one was found to contain only fragments of stone, of which there were many; and the other, a small fish, and a number of the "carbones" of some of the cod-tribe (*Gadidæ*). September 27, 1840; two seen in the bay. It is late in autumn and in spring chiefly that they are brought to Belfast from other northern localities: in the first week of October, I have seen specimens from Green-castle, on the Londonderry coast, and on the 9th of March, 1836, I purchased two from Killinchy, Strangford Lough: their stomachs were filled with the remains of fish. I have noted them twice as obtained in mid-winter;—one at Strangford Lough on January 6th, 1838, and on the 26th of the same month, an immature male, having one bar of black on the white speculum, was shot on a dam of fresh-water, near Carrickfergus: its stomach contained many pebbles and the remains of fishes, and in its œsophagus were five large three-spined sticklebacks (*Gasterosteus brachycentrus*). The late Mr. John Montgomery noted this species as received from Dundrum Bay, county Down, in November and December, and as being there every winter, where the different sexes are respectively called *bar-drakes* and *bar-ducks*.

A fowler endeavouring to obtain some of these birds in Larne Lough during three successive days in the middle of March 1850, was unable to do so, even with a swivel-gun, in consequence of their wildness. At least fifty birds were seen very far up the narrow part of the lough each day, some in pairs, and not more than a dozen in any flock. They came up daily from about its entrance, feeding with the flowing tide, and continued, on its ebb, to feed downwards. Within the preceding two months, fully a hundred mergansers daily frequented this locality for a considerable time, and flocks of twenty birds were common. Some years ago, nine were killed here at one shot with a swivel-gun.

Localities in Antrim and Down only have hitherto been noticed in connection with this bird. In the north-west of Donegal it is said to be of "autumn passage, common;"* is frequent during winter in Carlingford Bay, county Louth, and likewise in Dublin Bay,

"the crest was always upright, unless when it sloped a little backward, *in fright*; it never lay down entirely."

* Mr. J. V. Stewart.

where "it is the first of the *Anatidæ* to appear in autumn, and the last to depart in spring;—being sometimes seen before the end of August, and so late as the middle of May."* Mr. R. Ball, writing from Dublin on January the 16th, 1837, mentioned his having procured three mergansers that day, the stomach of one of which was enormous. The bird was gorged to the mouth with sand-eels (*Ammodytes lancea*), twenty-four of which were found in it.† This species is considered rare at Wexford, where it is called *land harlan:* a bird which came under examination here was filled to the œsophagus with crustacea.‡ In Waterford harbour, and at Dungarvan,§ on the coast of the same county, this merganser has been obtained, but is considered rare, as it was also in Cork harbour until the last few winters: during them, however, Mr. R. Warren, jun., has observed flocks there regularly. On the 23rd of January, 1849, he shot a very fine old male as the bird was fishing among some rocks at the opposite side of this harbour from Cove; on being skinned, a young hake and a pipe-fish were found in its œsophagus. Mergansers were more numerous than usual in the winter of 1849–50. On the 11th of January, in particular, between one and two hundred were seen on the water and on wing at the back of Cove Island. They were very wild, and would not admit of a boat approaching them within gun-shot. To Bantry Bay, and the bays and harbours on the coast of Kerry, they are regular winter visitants: ‖—several have been killed in the first-named locality by my informant.¶ Inland, they are common on the lakes of Galway in winter, and about Lough Conn, in the adjoining county of Mayo, they were often seen on sale by Mr. Bent Ball in autumn, having been killed as "flappers" (before well able to fly), in the neighbourhood of their birth-places.

* Mr. R. J. Montgomery.

† Audubon remarks:—"Glutonous in the extreme, it frequently gorges itself so as to be unable to rise. I have several times seen one of them obliged to eject a great part of the contents of its stomach and gullet before it could fly off, and some which I have kept a day or two in confinement have died in consequence of swallowing too many fishes" (vol. v. p. 93).

‡ Mr. Poole.

§ "Whence an adult male was sent me, February 11, 1838."—R. Davis, jun.

‖ Mr. R. Chute. ¶ Mr. G. Jackson.

Mr. Yarrell does not mention any breeding-haunt of this species in England either at the present or any former period. Scotland and its islands, however, have always been known as resorted to for the purpose of nidification, and we find both the fresh-water and marine loughs of Ireland to be so. Pennant mentions this bird as breeding in the island of Islay, which it does at the present time. When there, in January 1849, several, among which were adult males, came under my notice—I learned that a pair bred in the preceding summer near the sea-beach of the island, at Ardimersy, but that they do not nidify about the little inland fresh-water lakes, or tarns, in at least the south-east portion of the island. They are called *grey divers*. Numbers breed annually on the marine islets off Islay, laying from ten to twelve eggs.

The late Mr. G. Matthews informed me, on his return from the coast of Norway, that a species of *Merǧus* (*M. serrator* most probably, from description) was seen in numbers at Bergsfiord in September and October. Several were shot there, and, though tame and easily approached, they generally, unless killed dead, escaped by diving, having, as was remarked, "the power apparently to remain under water for ever. The manner in which they out-manœuvred us gave us some hearty laughs." Captain May was told during his sporting tour in 1849, before alluded to, that—"the Quäns, who live along the banks of the Alten in Norway, make boxes and place them in the birch-trees at the river-side for the mergansers to lay in, and when a good number of eggs have been deposited, they rob the nests." The *Mergus merganser*, or goosander, may, however, here be meant, as it is well known to build in trees in Scandinavia. A statement just similar to that given, but in reference to the golden-eye duck, has been contributed by Mr. Dann to Mr. Yarrell's work.

North America, as well as Europe, claims this very handsome species.

THE GOOSANDER.

Dun Diver (females and young males).

Mergus merganser, Linn.

Mergus castor, Linn. (females and young males).

Is probably an annual winter visitant, but in very limited numbers, and chiefly to fresh-water.

Mr. Templeton made a drawing of an adult male in full plumage, which he saw in the museum of the Royal Dublin Society, and was told had been shot at Wexford. In his journal, one is noticed as having been sent to him in March 1808 by Mr. James Ross of Comber House, county Londonderry, and of another ("Mergus castor") seen in Belfast market on the 7th of November, 1808.

My own notes and those of my correspondents on the species are as follow:—In the year 1833, a person to whom it was well known told me that, a few years before that time, he had seen two of these birds in full plumage in Belfast market: they had been only wounded, and bit wickedly at the tame ducks placed in the same basket with them for sale.

Dec. 30, 1836.—I purchased a fresh specimen, which was shot about the western shore of Lough Neagh.

Its weight was 3 lbs. 3 oz. Length 26¼ inches. Bill, from forehead to point, 2⅘; to posterior extremity, 2¾; to rictus 3⅛ inches. Tarsus 2⅛ inches. Carpus to end of wing 11 inches. The throat being thickly spotted with black, and other characters, indicate its being a young male of the second year (according to Jenyns' description). Upper mandible pinkish-red on sides, blackish horn-colour on ridge; nail of both mandibles black on the posterior, white on the anterior half. Under mandible, excepting a few irregular markings of black, wholly of a pinkish-red colour. Tarsi and toes bright orange; webs orange, shaded with brown. Irides deep golden yellow.

On dissection, it exhibited a young pike (*Esox lucius*), 8½ inches long, and quite perfect, except the lower jaw (which the gastric juice had acted upon); the posterior portion of another pike of equal size, and that of a third which had been considerably

larger than the others. These three fish had been swallowed head foremost, and the two latter were entirely consumed by the gastric juice, except the bones and the hinder portions, which, not having come in contact with it, were uninjured. *Jan.* 3, 1837. An adult male shot on the river Bann at Portglenone came under my examination. Its weight was 3 lbs. 9 oz. Length 26½ inches. Measurement of bill and wings as in the last. It contained an eel 11½ inches long, perfect and fresh-looking, except a little discoloration at the tail caused by the gastric juice. It lay tail foremost in the stomach, the eel being the most unaccommodating of fish in suiting itself to the wishes of its captors. There was another eel, much digested, which had been of similar size. The stomach also exhibited some small pebbles, and a full-grown *Trochus cinerarius*. About the 10th of March, 1837, two adult males, which came under my notice, were shot in Belfast Bay, and on the 13th of February, 1839, as splendid an old bird of this sex as I have seen was killed on the river Lagan, near Lisburn. Fresh specimens of a nearly adult female shot at Downpatrick, and an immature male, obtained in Belfast Bay, have come under my inspection; the former on the 24th of January, 1848, and the latter on the 8th of December, 1849; an adult male was in company with the young bird. Early in March, 1850, an old male was distinguished in company with red-breasted mergansers on Larne Lough.

On the 3rd of December, 1837, a male goosander (apparently in the plumage of the second year) was purchased in Dublin market: the dealer's name for it was "land cormorant." About the 20th of January, 1838, a female was sent by Sir Richard Levinge, Bart., to Dublin to be preserved, and, on opening it, forty-nine perch, averaging three inches each in length, and a young pike, seven inches long, were found.* I subsequently learned from this gentleman that the bird was shot at his seat, Knockdrin Castle, Westmeath. On the 1st of December, 1842, a young male was obtained in the market of the metropolis, by a

* Mr. H. H. Dombrain.

friend, who saw one or two others (females or young males) there that season. In the winter of 1846, two goosanders were seen there, and in that of 1848–49, the same number;—an adult male and female.* In the severe season of 1849–50, nine were sent to Mr. Glennon to be preserved;—of these, I saw an immature male in December, in which month, and in January, a female with two males in their beautiful adult plumage were received; one of these was shot in the county Wicklow, and another on the river Barrow, at Monasterevan. This species is enumerated among the birds obtained in Wexford harbour,† and is sometimes procured in that of Cork, but not so frequently as every winter;‡—in that of 1849–50 one was killed there. Old and young males and females are seen almost annually in the little harbour of Glengariff, where they are called *spear wigeon*. They frequented it commonly in the season of 1848–49, but in the following severe winter none were seen. All the birds of a little flock dive almost simultaneously, like golden-eye ducks.§ In the county of Kerry these birds are considered scarce, but Mr. R. Chute has procured for his collection an adult pair; one of which was shot at a salmon-weir at the head of Dingle Bay.

Latham informs us, on the authority of Mr. Jackson, that "the dun diver inhabits Ireland, and breeds upon the islands of the Shannon, near Killaloe, and is frequently seen there the whole summer through."‖ In a catalogue of native birds, kindly drawn up for my use, in November 1836, by the Rev. Thomas Knox, who for a time resided at Killaloe, it was remarked, under the head of *M. merganser*:—"A bird comes to the Shannon in spring, and stays all summer, called by the country-people shell-duck; but I am almost sure it is this bird. * * * I also hear that a similar bird comes in summer to lakes in the county of Clare;"—this was written without any reference to the passage

* Mr. R. J. Montgomery. † Major T. Walker.

‡ Dr. J. R. Harvey has, in a letter to me, corrected the remark made in the Fauna of Cork, implying that the goosander is more frequent there than the merganser.

§ Mr. G. Jackson, February 11, 1850.

‖ 'Synopsis of Birds.' Supplement, vol. vii. p. 270.

in Latham. On my representing to Mr. Knox the desirability of procuring a specimen of the bird in question, he endeavoured for a long time to do so, but ineffectually. I have not the least doubt, however, that the bird alluded to is the *M. serrator*, which is indigenous, and regularly breeds about our northern and other lakes, at some of which it is called scale-duck, as already mentioned.

Audubon gives a very complete description of the habits of the goosander, from which I shall extract a few sentences. He states :—"I have found fishes in its stomach seven inches in length, and of smaller kinds, so many as to weigh more than half a pound. Digestion takes place with great rapidity, insomuch that some which I fed in captivity devoured more than two dozen of fishes about four inches in length, four times daily, and yet always seemed to be desirous of more :"—the rapidity of digestion in the specimens which came under my own examination was most striking, as it likewise was in the case of the red-breasted mergansers. The same author remarks :—"The flight of the goosander is powerful, and as rapid and sustained as that of the red-breasted and hooded mergansers. When fairly under weigh and at a good height, they advance in an almost direct course, and proceed with surprising velocity, so that when suddenly apprised of the vicinity of man, they at times find it difficult to check their speed so quickly as may be necessary for their safety. I well remember that on several occasions having watched one of these birds flying directly up a creek, and towards me, I have taken aim at it and fired when it was at the proper distance, and yet, such had been its velocity, that it would advance after being shot many yards towards me."—'Orn. Biog.' vol. iv. p. 262.

The goosander is apparently less common in Ireland than in Scotland, but is perhaps as frequent as in England.

THE GREAT-CRESTED GREBE.

Crested Grebe. Tippet Grebe.

Podiceps cristatus, Linn. (sp.)
Colymbus „ „

Is occasionally obtained, particularly in winter, on the sea and fresh-water lakes;—at some of these it annually breeds.

Though next to the little grebe, the most common of the genus, its numbers are very limited, and but few specimens are obtained, except during very severe winters. The following notes on those which have come under my inspection in the hands of bird-preservers in Belfast, will give some idea, at least, of the number killed in the north-east of the island. The species was not known to Mr. Templeton as Irish.

January 1827—One was shot on Lough Neagh.
Jan. 2, 1831 „ „ inland, near Comber, Down.
„ 21, „ „ „ in another part of the same county.
Feb. 1833 „ „ near Lisburn, co. Antrim.
June 1834 „ „ on an artificial lake at Hillsborough Park (Down), by the gamekeeper.
April 1, 1835 „ „ on a lake in the county Cavan;—a beautiful bird, in adult summer plumage.
June 9, 1836 „ „ on a pond in the district of Loughgall, co. Armagh;—a fine adult male.
January 7, 1838 „ „ on Lough Neagh.
March 28, „ „ „ on Loughgall;—an adult bird.
April 27 „ „ „ „ an adult female, which, like the last, was in full breeding plumage. I found many eggs in it.
Oct. 19, 1839 „ sent to a bird-preserver, without any mention of locality.
March 1840 „ shot in Belfast Bay;—immature.
Aug. 26, 1840 „ captured in a net set for fish, about the middle of Lough Neagh;—adult bird, in full summer plumage.
Dec. 14, 1841 „ shot on Lough Neagh;—adult male.
„ 27, „ „ „ in the neighbourhood of Castledawson (co. Londonderry)—which is near Lough Neagh.
April 27, 1842 „ „ near Banbridge, co. Down;—a fine adult bird.
July 1844 „ „ on Lough Neagh;—adult male.
Summer, 1844 „ sent to a bird-preserver, without any locality being mentioned.

From the last-named period I ceased taking particular notes of their occurrence; but in 1845 I heard of one having, some years previously, been shot on Lough Achery, a few miles from Hillsborough; where the one only had been observed. In the last week of December 1847, a young bird of the year was shot on Lough Neagh; on the 15th of April 1849, an adult female, on Acton Lake, county of Armagh; and on the 30th of March, 1850, a bird in full adult plumage, on Lough Neagh;—the crest on this individual was so large and fine, that I considered it a male (the female bears the same appendage), which it was found to be on dissection. On the 13th of May the same year, an adult male was shot on this lake, near Lurgan.

One striking fact is learned from the preceding data, namely, that all the birds excepting one were killed upon fresh-water. Audubon, who gives a very good account of this species, remarks, that he never observed it near the sea-coast in North America.* During and after severe weather in winter, it is met with, sparingly, on the coast of Ireland.

The following notes bear witness to native specimens in Dublin.—*March* 1833. I saw one in Mr. Massey's collection at the Pigeon-house Fort. Mr. W. S. Wall, bird-preserver, stated that within the last few years he had received not less than 20 specimens, which were killed in various parts of Ireland. *May* 1837. He has now a bird in adult plumage, which was purchased early in April last, in Dublin market. I saw, in Mr. Warren's collection, two adult birds, in full nuptial garb, which were shot in the preceding month of March, by the gamekeeper at Knockdrin Castle, near Mullingar, the seat of Sir Richard Levinge, Bart. On dissection, they proved to be male and female: their plumage is similar, both having the ruff or crest. In this collection were three more of these birds, but wanting the ruff: one of them was shot in Kingstown Harbour, near Dublin. One only of these five specimens is bare of feathers on the abdomen, and it is in full summer plumage. All of the others are abundantly furnished

* 'Orn. Biog.,' vol. iii. p. 595.

with them, and exhibit no indication of any having been eaten, though all the grebes of this species opened by me had the stomach either wholly or partially filled with their own feathers. In March 1838, several great-crested grebes were brought on sale to Dublin. One has been shot on the sea, near the island of Ireland's Eye. In Mr. Watters' collection there is an immature bird, obtained fresh in February 1848 (said to have been killed on a river in Kildare), and one in adult summer plumage, shot on the 29th of July, 1849. In the very severe weather of January, 1850, several were sent to the metropolis.

This grebe has been procured during winter in Wexford Harbour,* and more than once on the coast of Waterford;—at Dungarvan, one ("between two and three years old," as described by Jenyns) was killed about the 1st of March, 1838.† Immature birds only, obtained in Cork Harbour, are noticed in the 'Fauna' of that county. On the 16th of January, 1849, one of these grebes was shot there below Cove, when in company with some divers; and on the 5th of February a flock of five was seen on the sea, at the back of Cove Island.‡ On the coast of Kerry it is occasionally procured.§ The Rev. T. Knox, of Toomavara (Tipperary), and previously resident at Killaloe, on the Shannon, wrote to me, on the 24th of November, 1836, that several great-crested grebes had, at different periods, come under his notice. Three of them (one in adult summer, the others in immature or winter, plumage) were, in July 1837, kindly sent by Mr. Knox for my inspection.

In 1840, I learned from a person resident in Connemara, that this species is found "in winter" on Loughs Corrib and Mask.‖ Mr. R. J. Montgomery, visiting the west of Ireland in February 1850, heard from fowlers that "loons" are in considerable numbers on those two lakes. He went in pursuit of them, but was unable to approach within shot, or near enough to determine the species, which most probably is the great-crested grebe. He was told that they are more numerous in summer than in winter. Their nests or

* Major T. Walker. † Mr. R. Davis, jun. ‡ Mr. R. Warren, jun.
§ Mr. R. Chute. ‖ Mr. W. M'Calla.

eggs had not been seen by any of the persons questioned respecting them. Two of these grebes, shot about the river Shannon or Lough Derg, on the 2nd of March, 1847, were sent to the Belfast Museum by the late Mr. J. J. Marshall, of Portumna. The one was in full summer plumage, and the other in the next stage to maturity. The lower plumage of the adult was greatly more shining and silky in appearance than that of the other. Dissection showed both to be males.

Breeding Haunts.—Under this heading, such of the instances as have already been mentioned that relate exclusively to the breeding season will be repeated.

The great-crested grebe is known to nidify in lakes situated in a few of the Irish counties, and probably does so in a number of them. In the summer of 1834, one was shot at a small lake in Hillsborough Park (Down), where the species is said to breed annually. The gamekeeper, before firing at the bird, was struck by the singular appearance of its back, and afterwards found, to his surprise, that this was caused by its having a young one under each wing.* An ornithologist visiting this park on the 10th of June, 1845, saw one of these birds on the lake, and was told by the keeper that its mate was probably on her nest, as, when not there, the pair are generally together. As a second bird had not been observed for a few days, it was concluded that the female was engaged in incubation. A pair only breeds here. None have been seen in any winter, excepting in that of 1847–48, during which two birds are said to have remained. No matter how many are produced here, never more than one pair returned to breed. Portion of a nest of the preceding year was brought to me from this lake in June 1849, and proved to be wholly composed of *Charæ*. The eggs are usually three in number.

Adult birds in full summer plumage, shot on the 26th of April, 1842, and in the first week of the same month in 1845, came under my notice; the former obtained in the neighbourhood

* Pennant was aware of its thus protecting its brood: and remarked—"It is a careful nurse of its young, being observed to feed them most assiduously, commonly with small eels; and when its infant brood are tired, will carry them either on its back or under its wings" (p. 420).

of Banbridge, and the latter at a small lake near Ballynahinch; both localities in the county of Down, where there is little doubt the birds were about to nidify. On the 26th of August, 1840, a a bird in full adult plumage was taken in a net set for fish, in Lough Neagh; in July 1844, an old male was shot there; and another on the 30th of March, 1850—circumstances implying its breeding about that great lake. An old sportsman has frequently seen these birds when shooting and fishing there, as well as on other Irish lakes;—often, he remarks, after they dived, he never saw them come up again.* From Loughgall, county of Armagh, I have seen adult birds obtained on the 9th of June, 1836, on the 28th of March and 27th of April, 1838, and presumed they had a nesting place there. At Castle Dillon, in the same county, I am assured that a pair annually builds.† In Loughs Eaghish and Kilcorm, county of Monaghan, they are stated to do so annually;‡ and also at Glasslough.† A bird in full plumage shot about the 1st of April, 1835, on one of the lakes of the county Cavan, indicates a breeding-haunt there. From an old pair having been shot in March 1837, on the lake at Knockdrin Castle, Westmeath, this locality may be added to the others.

The great-crested grebe is said to breed in some of the lakes of Wales, and in those of four of the English counties.|| Sir Wm. Jardine remarks—"Although Mr. Heysham has recorded the occurrence of the bird in Cumberland, we have never been so fortunate as to meet with it on the border during summer. It may be considered, indeed, there and in Scotland, rather as a winter visitant, and that in no great abundance."¶ The species is not included in Mr. St. John's list of the birds of Sutherland, nor in the last-published one of those of Orkney, as appearing at any season of the year. If it does not breed in Scotland, this can hardly be owing to the northern position of the country, as it nidifies farther north, both in Europe and America.

* *June* 1850. Since the above was put in type, the Rev. G. Robinson has (in the present month) found five nests of this grebe, each containing eggs, within a limited space on the borders of Lough Neagh. *Molrooken* is the name applied to it there.

† Gamekeeper at Caledon, 1850. ‡ Mr. R. Evatt, 1845.

|| Yarrell;—who has added one county to those named by Pennant.

¶ 'Brit. Birds,' vol. iv. p. 202.

The name of *tippet* grebe was bestowed on this species in consequence of its plumage being used by ladies in the now exploded adornments bearing that name, and consequently the poor birds were much persecuted. But, though tippets are to be numbered with the things that were, we have the indubitable authority of my friend Mr. Yarrell, that grebe-skins are still "in great request for making into muffs* for ladies, or, more frequently, to cut up into narrow strips as trimming for pelisses." Pennant (in 1776), writing of their "beautiful skins," mentions that "the under side of them being drest with the feathers on, are made into muffs and tippets; each bird sells for about fourteen shillings, * * * as high a price as those that come from Geneva: * * * its skin is out of season about February, losing then its bright colour: and in the breeding-time its breast is almost bare."† The Lake of Geneva has always been a great resort of this species, and in the admirable memoir of M. Necker on the birds of the neighbourhood of the city of that name, the *Podiceps cristatus* is fully descanted on.‡ Towards the end of October numbers of young birds arrive there, and become objects of the chase. The mode of proceeding is fully described (p. 85), and it is stated that many boats are occupied during winter in the pursuit of the grebe, which is often very lucrative, as for each bird the furriers give from six to eight francs. Mr. Yarrell, too, (p. 301) publishes an account of grebe-hunting on the Lake of Geneva, communicated to him by an English gentleman who had been witness to the sport. In 1846, I was informed by M. Alex. P. Prevost of Geneva, that the bird had then become very scarce on the lake. Mr. Selby (p. 395) briefly describes the chase of one of these grebes by Sir William Jardine and himself, on a lake in the vicinity of Rotterdam;—"an hour and a half's severe exer-

* They are always on sale in Dublin for ladies' cuffs, for a pair of which the skin of one bird is requisite. Seeing three pair exhibited in a furrier's window there in July 1850, I inquired the price, which was only 7s. 6d. a pair. They were stated to have been brought from Switzerland.

† Pennant describes the species as two, under the names of tippet and great-crested grebe.

‡ Mémoires Soc. Phys. and d'Hist. Nat. Genève, vol. ii. (1823).

tion," in rowing after it by men accustomed to the business was required before the bird was approached in such a manner that it could be fired at.

A fine adult bird, kept on the water in St. James's Park, London, is mentioned by Yarrell. This is probably the same individual which afforded much amusement to a friend and myself one evening at the end of April 1843, by the extreme agility displayed in fly-catching. It pursued its prey in all possible ways, shooting its neck vertically upwards for any passing overhead, the next moment to one side or other, and again making a rush along the surface of the water for two or three yards after some winged insect. I never saw so much agility displayed by any bird in this pursuit: all the numerous species of *Anatidæ* on the water, though busied fly-catching also, were the veriest dolts compared with the grebe.

This species has been already alluded to as more frequent in Ireland than Scotland, and, judging from general works on British birds, I should have believed it to be as common in the former country as in England. According, however, to the following extract from the Rev. Mr. Lubbock's 'Fauna of Norfolk,' and the communication from John Gatcombe, Esq., of Plymouth, which succeeds it, greater numbers have been observed there than I ever heard of in Ireland. Mr. Lubbock gives from personal observation much the fullest and most interesting account of the habits of this bird that I have seen, having had fine opportunities for studying them on the "broads" of that county. He states that "fifteen or sixteen might be seen in the same day and at the same time in different parts of South Walsham broad" (p. 84): whether all old birds, or old ones with their broods, is not mentioned. In the summer of 1833 he knew of five grebes' nests "upon a pool of water a good deal overgrown with reed" (p. 88). Nests of that year are, of course, meant, but there may be a fallacy in such a case. Two nests were reported as being on the lake in Hillsborough Park in one season, and correctly so; but, on examination, one of them proved to be the nest of a former year!*

* Two pair, however, bred here in the summer of 1850, the young of the first

Mr. Gatcombe writes, in 1850—"Specimens of the crested grebe are obtained almost every winter in the small bays along the shores of Plymouth Sound, especially near the entrance of the river Tamar; but large flocks appeared during severe frosts and strong easterly winds many winters ago. They remained off the sea-wall, near the Devil's Point, through the months of January and February, and during that time a great many were killed. My brother and I alone shot about twenty specimens, all in that state of plumage in which they are called the 'tippet grebe,' some of the younger birds bearing traces of the peculiar dark stripes on the cheeks and down the neck. We kept the skins of fifteen, intending to have them made into a tippet or muff; but, owing to our not being able to divest them of the thick layers of fat covering the skin of the breast, they became so rancid that we were ultimately obliged to throw them away. I was much struck with a habit the crested grebe had when on the water of suddenly erecting and shaking the plumage of the back, just in the manner of a bird after having charged its plumage with dust. On the eve of diving they would invariably sink their bodies deep in the water, showing only their long necks and a portion of their backs. During very rough weather they kept so near the shore that they were often obliged to dive suddenly through the waves to prevent their being dashed against the rocks. Many Sclavonian or dusky grebes were obtained in company with them. I have not known either species so plentiful since that time."

On the subject of *feathers contained in the stomach of grebes*, Dr. Fleming, in his 'Philosophy of Zoology,' remarks:—"We have found in the stomach of the eared grebe (*Podiceps auritus*), in the month of January, a large ball of its own breast feathers; probably pulled off and swallowed to satisfy its hunger" (vol. i. p. 316). Further allusion is made to this circumstance in the same author's 'History of British Animals,' where, after referring

brood being hatched about the last day of May; two weeks afterwards four eggs were found in the nest of the other pair. One of the females which was killed contained five eggs nearly of full size, from which circumstance there is no doubt that a second brood would have been produced.

to Montagu's having obtained feathers in the red-necked and the crested species, it is asked—"Are these to be considered as analogous to bezoars?" (p. 132.) Mr. Allis, of York, states that "in the stomachs of the larger grebes" he has "uniformly found a considerably-sized ball composed principally of feathers."* The Rev. T. Knox, in a contribution to Loudon's 'Magazine of Natural History' (vol. ix. p. 202), remarked on one of these birds† received by him on the 5th of January, 1836;—its "first stomach contained three perch, one five inches long and quite perfect, and the colours almost as bright as if just taken; the gizzard, which was very muscular, contained a great mass of feathers, and among them two or three perch partly digested, one of them three inches and three-quarters long, another one inch and a half. I washed the feathers, and, on comparison, found that they corresponded with those on the sides of the bird under the wing, or with those on the thigh. They were chiefly in a half digested state, and, as there were no traces of them on the lower intestines, it appears extremely probable that they may be finally assimilated with the food: or, is it necessary, in the economy of the larger species of grebe, that the gizzard should be always full?" Audubon, in describing an American species, the *Podiceps Carolinensis*, mentions having taken from their gizzards "a quantity of a feather-like substance, which he found to be the down of certain plants, such as thistles, &c." It is likewise remarked that he has obtained "similar substances in the stomach of many individuals of *Podiceps cristatus*"‡ (Orn. Biog. vol. iii. p. 362). He states, at p. 432, under *Podiceps cornutus*, "I have observed, in the stomachs of almost all that I have examined, a quantity of hair-like substances rolled together like the pellets of owls, but have not ascertained whether or not these matters are disgorged. They certainly cannot pass through the intestines. But unless birds

* Loudon's Mag. Nat. Hist. vol. v. p. 733.

† This individual is doubtfully called *Podiceps cristatus* in the communication;—having, with other grebes, been sent to Dublin for my examination, it proved to be that species.

‡ I cannot but think that the light downy feathers of the bird were mistaken for the seeds of plants, which they superficially resemble.

of this kind are kept in an aviary and watched, this matter must remain unknown." Mr. Yarrell remarks that "there is cause to suspect these birds [grebes] reproduce at will from the stomach the more indigestible parts of their last meal, as hawks, owls, shrikes, and some other birds are known to do."

The stomachs of great-crested grebes which came under my examination contained as follows:—April 1, 1835;—that of an adult bird from a lake in the county Cavan was, apparently, quite filled with feathers, but on looking carefully among them, I detected the bones, scales, &c., of a small fish and the remains of some aquatic insects: the feathers did not consist wholly of those of the breast and under parts, but some partially black and brown, such as compose the crest, appeared: it is therefore evident that they do not always restrict themselves, as has been stated, to the feathers of the under surface of their bodies. March 28 and April 27, 1838;—adult birds killed at Loughgall, had their stomachs filled with their own feathers. December 10 and 27, 1841;—an old male obtained at Lough Neagh at the former date, and an immature bird shot on or near it (sent from Castledawson to the Belfast Museum) were apparently filled with feathers; but among them, in one specimen, were some small crustacea (*Gammarus aquaticus*). March 2, 1847;—of two male birds (one adult and the other in the next stage to being so) from the neighbourhood of Portumna, one was filled with feathers and the other nearly so, but in it were the remains of fishes; both contained black and brown, as well as white feathers. One, procured on the 15th of April, 1849, had, in addition to the usual feathers, many bones of fishes, fragments of coleopterous insects, and a few portions of the stems of vegetables. March 30, 1850;—an old bird killed on Lough Neagh contained bones of fishes among a large mass of feathers; the entire contents, as usual, having a greenish tinge, owing, we may presume, to a secretion from the stomach. An adult, obtained on the 13th of May, the same year, on that lake, had the stomach densely packed with feathers, among which were small bones and 'ear-bones' of fishes, and the remains of coleopterous insects.

It will be seen, in the following pages, that the stomachs of the red-necked, the Sclavonian, and the eared grebes that came under my own examination, all contained feathers, but that those of the little grebe never did so. Mr. Darragh has remarked to me, with respect to the great-crested grebe (of which he has preserved a number of specimens), that at all seasons of the year feathers are ready to drop out on the slightest touch; a provision which we may conceive made to supply the wants of the digestive organs without any pain attendant on pulling the plumage from its body.

As I have never seen any satisfactory reason given for the invariable presence of feathers in the stomach of this species, the bodies of the last three birds were submitted to the examination of Dr. Gordon, Professor of Surgery, Queen's College, Belfast, in the hope that he might be able to throw some light upon the subject. He very kindly undertook the task, and examined a red-necked grebe also, obtained on the 23rd of February, 1850. His observations are as follow:—

"The proventriculus, or circle of glandules, occupying the lower end of the œsophagus, when opened and measured, was, in the crested grebe (*Podiceps cristatus*), one inch six lines in the vertical, and two inches four lines in the transverse diameter; whilst in the red-necked (*Podiceps rubricollis*) the vertical diameter was one inch and four lines, and the transverse two inches. The glandules are larger in the former than in the latter.

"The muscular coat of the gizzard is not so thick as in the *Rasores*, or gallinaceous birds, but exceeds that of the *Raptores*, or birds of prey, and is proportionably more largely developed in the crested than the red-necked grebes. The inner membrane or epidermic coat in both is nearly a line in thickness, and gradually becomes more dense and horny as we approach the pylorus, where it resembles that of the *Gallinaceæ*. The general cavity of the gizzard does not open abruptly into the small intestine, but forms a funnel, half an inch in length, with strong muscular walls, much constricted at its termination, so much so, indeed, as not to allow of the exit of at least the larger bones into the small intestines. It is therefore admirably adapted for retaining its contents and crushing the bones and other substances which may enter it. In

the *Podiceps cristatus* this tubular prolongation was full of feathers, which consisted of the shafts and barbs deprived of the barbules. These were not wound up confusedly in a ball, but lay parallel to each other and to the long axis of the tube. In the general cavity there were a large quantity of feathers, many fish-bones, portions of coleopterous insects, and a few pieces of the firm stems of vegetables. Some of the feathers are perfect, but slightly broken; others with the shaft and barb, but without the barbules; or the barbs alone, the shaft and barbules being removed. Had I not carefully examined the gradual but progressive alteration in the general cavity, I would undoubtedly have said that the tubular prolongation was occupied by a bundle of hairs, and not feathers, so close is the resemblance. The amount of barbules in the gizzard far exceeds that of the barbs or shafts, so much so, that it would require twenty times the number of feathers to produce an amount of barbules equal to those present. The bones in the gizzard seem to be little if at all acted upon by the proventricular fluid, and, from the thickness and density of the inner coat, it is probable that there is no secretion except that fluid. Now these circumstances deserve consideration, as they seem to imply that the proventricular fluid, which dissolves the soft parts, has no action whatever upon the bones, and that they, after being triturated, especially in the tubular prolongation of the gizzard, pass onwards into the small intestine, and there being mixed with the biliary and other secretions, form the dark-coloured and friable masses found in its upper part, which, as they pass onwards towards the vent, are gradually assimilated and converted into fluid excrement.

"In the gizzard of *Podiceps rubricollis* there are, comparatively, few feathers, and they are also less worn. There is also a less degree of muscularity, and a more perfect solution of the solid parts of its food by the proventricular fluid. From the preceding observations I infer that the feathers perform a threefold office. First, as a protecting medium, to defend the epidermic coat from laceration by the sharp edges and points of the fish-bones. Secondly, as a triturating apparatus. Thirdly, as a filter, the tubular prolongation allowing the fluids and triturated bones to pass into the intestine, whilst the coarser portions are retained, to be subjected to further action."

THE RED-NECKED GREBE.

Podiceps rubricollis, Gmel. (sp.)
Colymbus „ „

Is only known as an extremely rare winter visitant.

It is the rarest of the grebes in Ireland. The first recorded specimen that came under my inspection was an immature one procured late in the autumn of 1831 (by Dr. J. D. Marshall), from the captain of a vessel, who shot it on the coast of Down:* it is preserved in the Belfast Museum.† One which I have seen in collection of Mr. Warren, of Dublin, was noted as sent to the metropolis from the county of Wexford, on the 24th of February, 1838; but as the note was not made until some time after the receipt of the bird, possibly it may be the same individual that a correspondent informed me had been found on the shore near Arklow, on the 1st of that month.‡ It was said to be a female, and to agree with Jenyns' description of the "young at the age of two years." One was shot in December 1842, at the mouth of the Glengariff river, Bantry Bay, by Mr. G. Jackson, gamekeeper, and was the only individual he ever met with. In the collection of Mr. John Watters, jun., Dublin, I have seen a specimen of this grebe, stated to have been shot on a lake at Sandymount, near that city, on the 24th of January, 1848. One only of these birds has come under my examination in a recent state. It was shot in Belfast Bay on the 23rd of February, 1850, where it had been observed for the few preceding days, and was alone all the time. The following notes were made on it a few hours after death, and previous to its being skinned.

* Zoolog. Proceedings, 1835, p. 79.

† In Templeton's catalogue, one of these birds is stated to have been "caught in the spring of 1797, at Beers Bridge, county Down;" but probably the little grebe (*P. minor*) in its red-necked summer plumage is meant, as I have received specimens from that locality, where it breeds.

‡ Mr. H. H. Dombrain.

	in.	lin.
Length (total) from point of bill to end of tail . . .	17	0
,, of bill from forehead to point	1	7
,, ,, ,, rictus ,, ...	2	0
,, ,, ,, nostrils ,, ...	1	0
,, ,, wing from carpus to end of longest quill (which is the second)	7	0
,, ,, tarsus	2	4
,, ,, outer toe and nail (nail not extending beyond fleshy portion on this toe) . . .	2	9
,, ,, middle toe and nail	2	7
,, ,, inner toe and nail	2	0
,, ,, hind toe and nail	0	8

Weight, avoirdupois, 1 lb. 14¾ oz.

Colour of irides inconspicuous, brownish-yellow.

,, bill bright yellow towards base, greenish horn-colour towards tip.

,, outer side of tarsi and base of all the toes and webs dusky.

,, inner side of tarsi and upper side of all the toes and webs or membrane greenish-yellow.

,, plumage agrees precisely with Jenyns' description (p. 252) of the "young at the age of two years."

Dissection proved it to be a female.

The stomach contained the remains of several shrimps (*Crangon vulgaris*) and fishes, with 'car-bones' of small *Gadidæ*. A pipe fish (*Syngnathus acus*), ten inches in length, was perfect, excepting the head, which had become decomposed. The fish was so long, that, retaining its straightness, as it did, the caudal fin appeared in the throat of the bird. A number of feathers (but not a ball of them) from the bird's own body, were mixed with the food.

None of the preceding five individuals were adult, if the plumage of this age be similar in winter and summer. Two of them were obtained in the most severe winters (1837–38 and 1849–50) we have had within the period that the bird has been noticed. All the species of *Podiceps* are most frequently procured on the Irish coast during severe frost and snow. The red-necked grebe is considered rare in England. About the time that the last one occurred in Ireland, three individuals were stated at a meeting of the Yorkshire Naturalists' Club—on February 6th, 1850—to have "come under the inspection of Mr. Graham

(bird-preserver). One shot on the Ouse, in the middle of York, a fortnight ago, and two at Acaster, a few days since. The irides of all three were of a dirty yellowish-white colour, and not red, as is usually stated."* Those of the bird which came under my own examination were brownish-yellow, and those of the individual obtained in 1848 were noted as "primrose-yellow."

This species has not been sufficiently numerous anywhere to become an object of the chase, like the great-crested grebe, but, like it, is most difficult to be "run down" on the water. Mr. Knox tells us that "during March 1847, one of these birds having been observed for some time swimming and diving near the beach opposite Brunswick Terrace, Brighton, was pursued by a party of active rowers in a galley, and captured after a long chase."†

The red-necked grebe is of more frequent occurrence in England, and apparently in Scotland also, than it is in Ireland.

A pair of these birds was shot by Captain May, on the 13th of July, 1849, on a swampy lake near the junction of the Salten river with the Fiord, in latitude 67°. This may be a breeding-haunt of the species. No others were seen by that gentleman on any part of the coast, rivers, or lakes of Norway.

THE HORNED OR SCLAVONIAN GREBE.

Podiceps cornutus, Gmel. (sp.)
Colymbus „ „

Dusky Grebe (young).

Podiceps obscurus, Gmel. (sp.)
Colymbus „ „

Can be positively announced only as an occasional winter visitant.

In the journal of the late Mr. Templeton, one is mentioned as having been seen by him in Belfast market on the 23rd of

* 'Zoologist,' March 1850, p. 2747. † 'Ornith. Rambles,' p. 240.

December, 1808. A few individuals killed in the north in winter have come under my examination. One obtained in November 1821, in Strangford Lough, and now in the Belfast Museum, is in the plumage of Bewick's dusky grebe. On the 9th of February, 1831, one was shot near Whitehouse, Belfast Bay. In the last week of February 1833, another, in similar plumage, was shot in that bay, below Holywood, about which locality one had previously been killed. In January or February 1835, two were procured at the same time there. On the 6th of March 1835, one of these grebes was sent from Coleraine to be preserved, and came under my examination in a fresh state. The following notes were made upon it.—

	in.	lin.
Length (total)	14	0
„ of wing from carpus to end of first quill	5	10
„ „ bill above, from forehead to point	0	11
„ „ „ from rictus to point	1	4
„ „ „ „ nostrils to tip	0	7½
„ „ tarsus	1	11
„ „ middle toe and nail	2	1
„ „ outer toe and nail	2	3

Lore red (colour of raw beef), irides vermilion-red. This bird was ascertained to be a male: but not the least appearance of adult summer plumage was visible on the head, though the great-crested grebe often exhibits its nuptial garb as early in the season. The stomach was entirely filled with feathers. On the 1st of February, 1838, one of these birds was obtained in Belfast Bay, near Bangor.

The 'dusky grebe' is a very rare winter visitant to the north-west of Donegal.* Mr. Warren wrote me of four individuals having been shot near Dublin at the end of February 1838;—two of them, which I subsequently saw in his own collection, were in the plumage of the dusky grebe. One, sent from the county of Cavan in that winter (1837–38) to Mr. Wall, bird-preserver, Dublin, was the only individual of the species ever received by him. In the month of January 1838, an immature bird was

* Mr. J. V. Stewart.

killed at Clogheen.* One "in the plumage of the swimming bird, figured in Yarrell's work" (immature) was shot in the last week of May 1843, on the canal near Blennerville, county Kerry.† Its being in this plumage at such an advanced period of the summer leads to the conclusion that the species does not reach maturity in one year.

Specimens of this grebe were obtained in Dublin market, or sent to the city for preservation, as follows. One in the winter of 1842–43?—now in the University Museum. One, said to have been shot on the Wexford coast, 10th of February, 1847, during severe frost. One in February, and another in October, 1848. The last of which I have been informed, was killed on December 19, 1849: all of these are in the plumage of the dusky grebe.‡

Not one of the above specimens seen by myself, or described to me by others, was in adult summer plumage. All were, indeed, what are considered by Mr. Selby to be the young of the year. It will be remarked that most of them were obtained in the last great *Anatidæ* winter of 1837–38, and that they occurred from the north to the south of the island. The still more rare red-necked and eared grebes were also procured that season.

This grebe is of more frequent occurrence in England and Scotland than in Ireland. Sir William Jardine considers it the most common species, next to the little grebe, in Scotland, and remarks — "Specimens occur during the whole winter in the Edinburgh markets, and we have frequently shot it in the river Annan during winter: it never attempted to fly, but was not nearly so watchful as the little grebe, diving, but coming up again in sight, and allowing itself to be approached within shot. The little grebe, on diving, immediately seeks some cover, and is not again seen."‖ The Sclavonian grebe is said to be, "though in small numbers, a constant inhabitant in Orkney,"¶ and to

* Mr. R. Davis, jun. † Mr. R. Chute.

‡ I have seen two of those alluded to in Mr. Watters' collection.

‖ 'Brit. Birds,' vol. iv. p. 207. ¶ 'Hist. Nat. Orcad.' (1848) p. 83.

remain permanently in Sutherland.* Nothing is said of its nest having been observed in either place. A few pair are believed to breed in England.

Audubon gives an excellent account of this bird from his own observation.†

THE EARED GREBE.

Podiceps auritus, Linn. (sp.)
Colymbus „ „

Can only be recorded with certainty as an extremely rare winter visitant.

One was shot in January or February 1835, in Belfast Bay, when two young horned grebes were likewise obtained. On the 30th of November, 1846, two eared grebes were killed at a shot in Belfast Bay after a few nights of severe frost, accompanied by snow; but either these individuals, or birds of the same species, had been seen singly in the bay for the preceding two months. The first time that they appeared in company was the day of their death. Two of the wild-fowl shooters attempted, but in vain, to procure the birds when observed singly. The rapidity of their movements under water surprised them, as "one moment they would be close to the shore, and the next far out in the water." Grebes are very seldom seen in this bay. The two fowlers alluded to, though shooting here regularly for a period of from fifteen to twenty years, had never observed any grebes but these two, excepting the *Podiceps minor*. One of them was so injured as to be unfit for preservation; the other was set up for the Belfast Museum. Their irides were vermilion-red. On dissection, both were ascertained to be males. Their stomachs exhibited quantities of feathers from different parts of their bodies, among which were several of a black colour from their dorsal plumage. They contained two large specimens of the doubly-spotted goby (*Gobius Ruthensparii*), a

* St. John's 'Tour,' &c. vol. i. 140. † 'Orn. Biog.' vol. iii. p. 429.

number of common shrimps (*Crangon vulgaris*), and of opossum shrimps (*Mysis*). On the 11th of November, 1847, two more of these grebes were killed at the same shot to the west of Garmoyle, Belfast Bay, but unfortunately were not saved for preservation. All of the preceding birds were in winter plumage.

On the 24th of February, 1838, several specimens of the eared grebe were sent to Mr. Glennon from the county of Wexford.* An immature one was obtained at Muskerry, county Cork, in 1847.† Two birds, in full adult summer plumage, have come under my notice. One of these was shot near Dublin, on the 15th of June, 1847, and is in Mr. Watters' collection. The contents of its stomach, having been preserved, were shown to me, and consisted wholly of downy feathers, with the exception of a quantity of the remains of coleopterous insects that glittered among them; two large beetles were in its throat. The other individual, in full summer plumage, was shot early in June 1849, near Benburb, Armagh, and is in the possession of the Rev. George Robinson, of Tartaraghan rectory in that county.

The eared grebe would appear, from the preceding records of its occurrence, to be about equally scarce in Ireland as in England and Scotland. In both of these countries it is considered the rarest species of the genus *Podiceps*;‡ but in Ireland, the *P. rubricollis* is still more rare.

THE LITTLE GREBE.

Dabchick; Blackchin Grebe (old).

Podiceps minor, Gmel. (sp.)
Colymbus „ „

Is a resident species distributed over the island.

It is mentioned in Smith's Histories of Cork and Waterford; in the former, as "common on the sea-coast," and in the latter, as "sometimes killed in this county." M'Skimmin, in his 'History

* Mr. T. W. Warren. † Dr. J. R. Harvey. ‡ Jardine, Yarrell.

of Carrickfergus,' alludes to it as breeding at Lough Morne, and as being called *Penny Bird.** In different parts of the same county (Antrim) it bears other names, being called by the country-people about Clough, *Willie Hawkie,* and by those about Toome by the still less elegant appellation of *Tom Puddin.* When on Lough Beg, near to this place, on the 3rd of August, 1846, I saw several of them; — by the name just mentioned, and that only, were they known to our boatman. It is a most unobtrusive species, and requires to be patiently looked for to be seen at all, unless it comes within our view by chance. It breeds in several localities around Belfast, and, though considered a bird of shy disposition, sometimes selects for nidification very small ponds in much-frequented places. A locality of this kind in a bleach-green on the outskirts of the town on the Falls road was chosen for many seasons recently by a pair, which generally succeeded in bringing out their brood of five or six young in safety.† At the lake on whose borders Lissanoure Castle (county of Antrim) is situated, several pair of these grebes formerly bred every year, but they have become scarcer of late. Their nests were often found, and after a storm have been seen floating on the lake with the birds sitting on them.‡

When riding one day, in mild weather in the month of January, on the banks of the Lagan Canal, above the second docks, I was interested for some time in observing one of these birds, which, though quite near, evidently considered my presence no intrusion. It kept diving for food, and every time, on rising to the surface, showed that it had been successful, the motion of the mandibles indicating the breaking of its prey, probably water-beetles, before being swallowed. I was amused, as one often is in watching for the re-appearance of diving birds, to see it frequently rise to the surface in the direction opposite to that anticipated. "The ra-

* *Drink-a-penny* is a name applied to it in Strangford Lough.

† "*June* 17, 1808. Went to see a grebe's nest at Lyster's pond; it had yolk-coloured eggs, about the size of a thrush's, but longer shaped."—Mr. Templeton's Journal.

‡ Mr. B. Brooke, 1850.

pidity with which the little grebe can emerge, and again conceal itself when alarmed, is remarkable. The leap of a trout is scarcely more instantaneous. They hunt much in pairs. When undisturbed, they seldom remain below so long as half a minute."* Sir William Jardine was once witness to the motions of this species under water, and observes that, "when moving straight forward it is propelled by the wings, a sort of flight, but when turning, and, we presume, when seeking its food, it has an easy, gliding motion, feet and wings being used as occasion requires, sometimes on one side and sometimes on the other, and we were reminded of the graceful gliding motions of the otter, where every turn seems given with perfect ease, at the same time with great activity and quickness."† This comparison will be appreciated by those who have witnessed the elegantly graceful turns of the otter in his pond at the Zoological Garden, Regent's Park, London, where they can be seen to admirable advantage. Mr. R. Ball, at one of his zoological lectures in Dublin, exhibited a little grebe at which fourteen shots were fired before it was secured!

During frost, I once met with this species swimming near the shore in Belfast Bay, when the tide was smooth as a mirror. On another occasion, a little grebe was, in severe weather, shot beneath one of the arches of the Long Bridge here. On the 18th of November, 1841, after three days' frost, severe for this early period of the winter, and when a thaw had commenced, one of these birds was shot in Dunbar's Dock, Belfast, and another was seen in the same vicinity: on examination of its stomach I found the remains of vegetable matter, with a few small shells, *Lacuna quadrifasciata*, *Rissoa ulvæ*, and the very young of *Littorina rudis*.

The stomach of one of these birds, examined by me in September, was filled with the remains of a few three-spined sticklebacks (*Gasterostei*), crustacea, and aquatic insects, among which was a perfect boat-fly (*Notonecta*). Another, killed on the 1st of

* Mr. J. Poole.

† 'Brit. Birds,' vol. iv. p. 210. The whole account of this bird, as observed by the author in the south of Scotland, is very interesting.

September, contained portions of a *Gasterosteus*; several specimens of the shell *Valvata obtusa*, and some aquatic insects. An individual, captured in the eel-nets at Toome Bridge on the 17th of October, contained a mass of the remains of those insects, of which *Notonectæ* were the chief. Another bird, procured this month, had its stomach quite full of similar food; with which also, and mollusca (*Planorbis carinatus* and *Limneus palustris*), one, obtained at the Shannon near Portumna on the 2nd of March, 1846, was filled;—no feathers appeared in any of the stomachs of the little grebe examined by me. Five perfect specimens of the shell *Paludina tentaculata* (*P. impura*, Lam.) were reported to me as found in the stomach of another bird.*

The little grebe is equally common to suitable localities throughout the year in all parts of the island;—in the north-west of Donegal, as well as south-east of Wexford; in the north-east of Antrim, as well as south-west of Kerry; is common inland about the Shannon, on the Connemara lakes, and those of Connaught generally. It has already been mentioned as breeding in a small pond close to the town of Belfast. About two wild pair breed every year in the pond of the Zoological Gardens, Phœnix Park, Dublin. At Baldoyle also, in the vicinity of the metropolis, they have had a breeding haunt. Localities in which the great-crested grebe nidifies have generally the little grebe for a tenant also, though the former species requires a much greater extent of water than suffices for the other. Mr. R. Davis, jun. (of Clonmel) observes of the *P. minor*—"its nest is so well concealed that a search for it is almost useless;" a remark which is made feelingly, from his being an egg-collector.

On a small and very retired sheet of water at the base of lofty mountains at Aberarder, Inverness-shire, which came under my observation when grouse-shooting there during September 1842, several of these grebes were seen, and one of them shot: they doubtless breed there, far remote from any others of their kindred.

* Mr. J. Watters.

THE GREAT NORTHERN DIVER.

Imber Diver.

Colymbus glacialis, Linn.

Is a regular winter visitant to the coast, remaining from five to six months, and is occasionally met with in summer.

The earliest note before me of its seasonal visit to Belfast Bay appears under October 21, 1834, when I saw one which had been captured a few days before in the net of a Carrickfergus fisherman. This bird had previously a narrow escape from his "long lines," as a hook was in its mouth when taken, proving that it had been making free with some fish-bait. Had this diver escaped hook and net, neither of which was intended for its capture, it would have attained full plumage the following spring.* As these birds sometimes occur throughout the summer, the latest period of their stay in spring, or time of departure northward, cannot be stated; but on the 26th of April, 1831, an individual in fine adult plumage was killed in the bay already named: its "weight was 12 lbs.; length 3 feet; eyes hazel." On the 26th of May, 1840, a specimen in full plumage, captured on one of the banks in that bay, was brought on sale to Belfast;—on the 7th of May, 1844, an immature male was shot there. Two were seen, about a mile apart from each other, on the sea off Donaghadee, on the 5th of May, 1846. On the 21st of April, 1847, two pair were observed, the one about the Copeland Islands, the other off Bangor; — they were all immature. Several other *Colymbi*, seen on that day but not very near, were believed to be of this species. Nine appeared in a flock near Carrickfergus, on the 2nd of May, 1849, and admitted of a sufficiently near approach for two of them to be wounded by a large shoulder-gun:

* See notice of the depth at which this species has been taken in nets, under Gannet.

on the 19th of that month an adult bird was seen at the entrance of the bay.

On the 24th of April, 1850, a great northern diver (in its third year's plumage) was captured off Island Magee, on a hook baited with "buckie" (*Buccinum undatum*) for cod, and brought uninjured to Belfast. The bait was taken, at a depth of from thirty to forty fathoms. The bird was purchased by a gentleman to keep along with a number of other species in his possession; but when sent home for that purpose, its most melancholy cry—somewhat resembling the howl of a dog as he "bays the moon," though not very long-drawn—wrought so upon the feelings of the lady of the house that she besought its liberty, and a few hours afterwards—in the privacy of night—it was consigned to its native element. When placed on the sea, it dived for about fifty yards, and then emerging, assumed for a moment an upright position, flapped its wings, gave a loud cry (or "crow"), as if of defiance, and seeing the boat approaching, dived again. It was not farther followed. Although the wings were perfect, this bird did not attempt to rise into the air from the ground, nor from a very large vessel of water in which it was placed. Quickly, however, its way was made in a swimming manner along the floor of a shop in which it was temporarily placed, while its mournful note, frequently repeated, attracted such a crowd, that the bird was hurried away with all possible speed.

A great northern diver, shot by a bird-preserver in Belfast (its weight 14lbs.) came under my inspection some months afterwards, when he believed it to have been killed in July, but had no note on the subject. It was obtained at Garmoyle, a deep pool in the bay, about three miles from the town, and a favourite haunt of the species in winter, when two or three are frequently to be seen at one view. Proceeding from this place to the entrance of the bay, the same day on which the specimen was procured, my informant saw a considerable number of these birds dotting the water singly here and there all the way: there may have been forty altogether. Dr. Fleming has remarked, that "the young birds are occasionally seen in summer in the

Zetland seas." * With respect to the *number* said to have been observed in Belfast Bay, the following is a kind of corroborative note:—the *season* is the singular feature in what has just been stated, but where dates are not remembered even the month may be incorrect. According to a memorandum by the late Mr. John Montgomery, great northern divers were (to use his own words) "very plenty at Dundrum, county Down, in the beginning of January 1822: I could not have seen less than from fifty to sixty in one day between the outer and inner bays. We killed six, which was thought a wonder, as a person who shoots a good deal here said he never saw them shot before, but that the fishermen sometimes found them drowned in the nets, in which they got entangled when diving for their prey. They are difficult to kill on account of their diving at the flash of the pan, and even when struck they carry away a great deal of shot. Though many shots were fired at them and other birds during the day, they never attempted to take wing, but always dived. They swam under water very fast, and always gained on the boat whether with or against the tide." In a note of January 1823, the same gentleman remarked that great northern divers are very plentiful at Dundrum every winter. Two females which he weighed were 9 and 11 lbs. One shot near Cushendall in November 1842, was reported as weighing 16 lbs. Notes have been supplied to me of a young male killed in Dublin Bay, weighing 10 lbs. 2 oz., and an adult obtained at Lambay off that coast 26 lbs.! Both this species and the red-throated diver vary remarkably in size.

With respect to Cork harbour, it was stated in March 1850, "The northern divers appeared as usual this winter. In pursuing them from a boat, when they are once frightened or fired at, it is impossible to get within shot again, they swim so quickly under water. A boat has no chance of coming near."†

In Larne Lough, where these birds are little molested, they

* 'History of British Animals,' p. 133. It is also stated there that the author "observed one off the coast of Waterford on the 28th of July, 1816."

† Mr. R. Warren, jun.

may sometimes in the calmest days be seen within shot of the shore, far up the estuary, occasionally near its inner extremity. Wild-fowl shooters in Belfast Bay, who have had ample opportunities of observing the great northern diver, dissent from Mr. Dunn's view, as quoted in Yarrell's work ('Brit. Birds,' vol. iii. p. 430, 2nd ed.). It is there stated that in diving it does not appear "to make the least exertion, but sinks gradually under the surface without throwing itself forward, the head being the last part that disappears." They maintain, on the contrary, that it and the red-throated species go under water like any other gently diving birds, as grebes, &c. By throwing themselves forward in the usual manner, the head being first immersed, they disappear quite noiselessly—glide, as it were, beneath the surface with the greatest ease, and not with a splash like some of the diving ducks, &c.

On the 28th of May, 1842, a great northern diver was observed for some time by Mr. G. C. Hyndman and myself, as it swam and dived about very near the village of Glenarm, within shot of the shore. It was an adult bird, the collar round the neck and the markings on the back being apparent. It brought up (caught by the middle) a fish about six inches long, which was turned and swallowed head foremost. We timed the bird's diving twice, and in each instance it was just one minute under water. With our watches ready a third time, we both looked out most attentively for its re-appearance until fifteen minutes had elapsed, but in vain! Had it come up within a furlong of where it dived, we considered that the bird could not possibly have escaped our notice. I should have thought it was caught in a net had one been near, but was told that none was then set on the coast. What became of the bird is a mystery. On the following day we saw one of these divers near the same place, and, apparently, from plumage, the individual that had so befooled us. The driver of the mail-car from Glenarm to Cushendall, looking upon a diver here as a daily acquaintance, remarked, that he knew it well as a frequenter of the place, chiefly in summer, for two years: he had seen a second bird in the locality. Four years previous to this time (early in

June 1838), Mr. Hyndman observed one of these birds, perhaps the same individual, very near the shore here. The Rev. G. M. Black frequently sees the great northern diver, during winter, in the sea off Annalong, at the base of the mountains of Mourne. Some of the birds are in mature plumage. They appear to have favourite haunts, as he has observed what was believed to be the same bird, week after week in the same place. He has sometimes seen them take to wing.

Mr. J. V. Stewart, in his published list of the 'Birds, &c. of Donegal,' remarks:—"From *Colymbus glacialis* and *Immer* being very common in this county, where they arrive the first week in October, I have had good opportunities of observing them. * * * I have every season been able to procure a number of both, and have thus been enabled to select for my museum an uninterrupted succession, proving, by almost imperceptible changes, the transition from *Immer* to *C. glacialis*: the former of these, in the early part of their residence here, is much the more common, but towards the end of spring, when they leave this country, the number of the latter is greatly increased, and though, even at that period, they have not attained the perfect plumage of that bird, yet, the completion of the white spots on the back, and the black bands on the neck, though not yet quite perfect, are sufficient to characterize the bird in such a manner that it cannot be mistaken. These birds appear to vary much in size and weight; they generally measure, from the tip of the beak to the end of the tail, two feet nine inches, and weigh about nine pounds; but I lately got a specimen, in the plumage of *Immer*, measuring only two feet four inches, and weighing but six pounds; and as I can perceive no difference in its bill from that of *C. glacialis*, I am forced, in following the indications of Temminck, to consider it as that bird, though its diminutive size would have led me to consider it as the young of *C. arcticus*, which I have not yet ascertained in this country. That these birds are well able to fly, I have had frequent proofs; but not so as to their pedestrian capabilities. One which I got alive and uninjured, on being placed within a few yards of the water, when I was setting it at liberty, remained on

its breast wistfully looking at that element in which it was accustomed and wished to move, but appeared quite incapable of transferring itself to it, and, though placed repeatedly upright, it always fell down again on its breast. It was only at length emancipated from this helpless state by being placed close to the edge of the water, when, pushing itself along with its wings and feet, it got afloat, and joyfully diving, bid us a long adieu. The mode in which the toes are jointed with the tarsus prevents their being bent forward out of its line; and the great sharpness, posteriorly, of that member, renders it almost impossible for it to walk; and this trial of its powers would seem to indicate that it can only rise on its wing from the water. I therefore think it must hatch on low islets, from which, without much exertion of its feet, it could launch itself."*

In October 1840, I was shown, at Florence Court, an adult bird of this species, which had been killed by the blow of a stone in a mountain rivulet of that neighbourhood, two months after the great hurricane of January 1839;—the taxidermist remarked that there was no indication of its having been previously wounded. It was presented by the Hon. John L. Cole to the Belfast Museum. On the day after that hurricane, one was shot in a dock at Ringsend, Dublin. After a gale in March, 1844, a great northern diver was obtained on the river Lagan, above the bridges which span it near Belfast. The species apparently sometimes leaves the coast, by choice, for fresh water, as I have seen a fine adult bird, in the highest condition, which was shot on Lough Neagh. One has been killed at Ballibrado, near Cahir, Tipperary. In May 1830, a pair of these divers, both adult, frequented Lough Fea, county Monaghan, where they were observed for some time by Robert Evatt, Esq., of Mount Louise.

From the length of time that this species is in attaining full plumage, by far the greater number of birds killed are immature, but a fair proportion of adult birds relatively to them, visits the coast of Ireland.

* Loudon's 'Magazine of Nat. Hist.' vol. v. p. 585. 1832.

Mr. R. Ball, in mentioning to me that two fresh specimens of this bird had been brought to him in Dublin on the 23rd of December, 1844, remarked, that in the throat of one were the body (without the claws) of a large shore-crab (*Carcinus mœnas*), and two razor-fish (*Solen siliqua*). The stomach of one of these divers, killed near Holywood, Belfast Bay, that came under my own notice, contained the bodies of two crabs, a *Carcinus*, and one of the larger species of *Portunus*, each of middle size.

The great northern diver has already been incidentally alluded to as occurring on various parts of the coast. It is a regular winter visitant in the south, as well as in the north. Two of my correspondents mention immature birds as not uncommon every winter on the coast of Waterford and Cork, though one adult bird only had come under the notice of either of them there.* On the 24th of May, 1842, a female, in at least the next stage to maturity, the back being quite perfect, and nearly all the dark neck-collar likewise so, was shot off Dungarvan in the former county. "It contained no eggs larger than snipe shot, except two, the size of swan drop."† At Glengariff, Bantry Bay, they are sometimes seen until April;‡ about Tralee, three or four adult birds have been obtained, one of which was captured in a lobster-pot§:—in the bay there, two, in the plumage of the imber, were seen and one of them shot, late in the month of May 1850.‖ On the Galway coast, about Roundstone, they are considered rare.¶ A fine adult bird taken in the nets of E. J. Cooper, Esq., Markree Castle, county Sligo, on the 4th of June, 1850, was sent to the University Museum, Dublin. The species is generally dispersed around the coast, though in much less numbers than the red-throated diver.

I ascertained, when at Islay, in January 1849, that the great northern, as well as the red-throated diver, are regular winter visitants:—I saw some of the latter species.

* Dr. J. R. Harvey, June 1848.

† Mr. R. Davis, jun.

‡ Mr. G. Jackson.

§ Mr. R. Chute.

‖ Mr. Robert D. Fitzgerald, jun., Tralee.

¶ Mr. W. M'Calla.

In a lecture on native birds, delivered some years ago by Mr. R. Ball, in Dublin, he stated, that a great northern diver, shot on the Irish coast, and in the possession of Sir Philip Crampton, Bart., was found, when killed, to have an arrow headed with copper, sticking through its neck. He remarked that the bird had probably been struck with this arrow by an Esquimaux on the Coppermine river, and was indicative of the extensive flight of the species.

The 'Penny Magazine' for August 1839 (p. 319) contains an original and interesting article on the mode of hunting this diver in North America. Audubon gives a very full account of the bird, in the fourth volume of his 'Ornithological Biography,' p. 43.

THE BLACK-THROATED DIVER.

Lesser Imber (young).

Colymbus arcticus, Linn.

Is extremely rare.

A specimen of this bird, which I recorded in the 'Zoological Proceedings' for 1837 (p. 54), was obtained with two other *Colymbi* (*C. septentrionalis*) in Larne Lough at the end of December 1831, by Dr. J. D. Marshall, who remarked that they were very tame compared with brent geese, cormorants, and other sea-fowl. The following notes were made on this bird after its being preserved:—Length (total) $25\frac{1}{4}$ inches; of wing from carpus to point of quills, $10\frac{1}{4}$ in.; of bill from rictus to point, $3\frac{1}{4}$ in.; of tarsus, $2\frac{3}{4}$ in.; of middle toe and nail, $3\frac{1}{4}$ in. Sides of the neck marked with dark longitudinal striæ, which likewise appear, but fewer in number, in front of the neck; throat pure white. The only difference between this specimen and descriptions of *C. arcticus* in the first year, is, that the base of its lower mandible appears channelled, and might perhaps be called thickened in the middle, though most obscurely so. The bill in profile is just that

of *C. arcticus*, and, therefore, strikingly different from any specimens of *C. septentrionalis* examined by me. I was informed in November 1837, that about four years previous to that time, a bird agreeing with *C. arcticus* in full plumage was taken at Lurgan Green, county of Louth.* On the 5th of March, 1847, H. Bell, wild-fowl shooter, saw one of these divers in full adult plumage on wing in Strangford Lough; he described it as the most beautiful bird he had ever beheld. One is stated to have been shot in the winter of 1847–48 in Dublin Bay.†‡

Mr. R. D. Fitzgerald, jun., on the 23rd of July, 1850, passed within a few yards of three birds swimming in Tralee Bay, that he considered to be a black-throated diver with its two young. One of these he shot, was hardly more than fledged, and had no quill feathers, but merely down in place of them. From its appearance he believed that it must have been bred in that neighbourhood. "It agreed with the young *C. arcticus* of Selby and the Lesser Imber, considered by him as the same."

This species, so extremely handsome when adult, appears to be more rare in Ireland, in winter, than in England or Scotland. Very interesting descriptions of its habits about its breeding-haunts in Scotland are given from personal observation in the works of Mr. Selby, Sir William Jardine, and Mr. St. John.§

* Mr. H. H. Dombrain.

† Mr. R. J. Montgomery.

‡ In the Report of the Dublin Nat. Hist. Society for 1841–42 (p. 8) one of these birds is mentioned as having been shot in Tralee Bay; but Mr. R. Chute, to whom the specimen referred to belongs, has informed me that he does not know where it was killed.

§ 'Wild Sports, &c. of the Highlands,' ch. xxvii. p. 215, and 'Tour in Sutherland,' vol. i. pp. 8, 12, 40. These pages are particularized, as there is no index to either work.

THE RED-THROATED DIVER.

Speckled, First Speckled, and Second Speckled Diver.

Colymbus septentrionalis, Linn.

Is a regular winter visitant to the coast, where it remains from five to six months.

Its earliest appearance for the season in Belfast Bay, that I have noted, is the 16th of October (1843), when two with red throats were seen. On October the 26th, 1831, an adult bird was killed there. About the middle of October 1849, a flock of five or six of these birds appeared on wing high in the air above Larne Lough, and, by their well-known and peculiar wild cry, attracted the attention of my informant, who was fishing. As their flight was southward when first perceived, they were imagined to be on migration, but they turned and flew back in the opposite direction. From that period until the end of the month when the opportunity for observation ceased, other little flocks, like the one described, were frequently seen there on wing.* Mr. R. Chute, when writing to me on the 23rd of October, 1848, remarked—"there are now several red-throated divers in Tralee Bay." They, however, doubtless arrive occasionally in the north at an earlier period, as in the southern harbour of Wexford a bird in full adult summer plumage, shot on the 18th of September, 1846, was kindly sent to me by Major Walker,† and in Cork harbour, two individuals (of which one was adult) were seen on the same day of that

* Mr. Darragh.

† It is preserved in the Belfast Museum;—this is mentioned on account of the season of the year at which the fine red throat was displayed. See Yarrell, 'British Birds,' vol. iii. p. 448, 2nd edit.

Mr. R. Ball, writing on the 29th of October, 1844, remarked that he had received, about a week previously, a living red-throated diver in pen feathers. "Although so young that the quills were just budding, it had a little red on the neck." This bird was placed on a pond in the Zoological Garden, Phœnix Park, Dublin, where it was at once attacked by a cormorant, and, as was supposed, eventually killed by him.

month in 1849.* On the 21st of April, 1847, several (immature), and on the 3rd of May in the preceding year, three birds were observed in Belfast Bay. At Glengariff, Bantry Bay, they remain until April, at the end of which month, three or four with red throats were shot in 1849.†

On April 16th, 1832, a living bird, which had been wounded on that or the preceding day, at Garmoyle, was brought to me, and a few others were at the same time procured there. Three of these were in different states of plumage, as it were in that of the first, second, and third year, the last almost perfect, but the red throat-mark not quite 'made out;'—the adult plumage is much the rarest state in which the species is obtained. I have often remarked that one of these birds is seldom seen without a second being near, and although each individual requires a certain range of sea to itself, several may sometimes be observed at one view. On November the 11th, 1839, about twelve thus came under my notice in the last-named locality. They are very interesting birds. An imaginative writer like Buffon might fancy them exhibiting a guilty aspect, and, through a consciousness of their evil ways, concealing under water the whole body, except the mere line of back, their eye being at the same time bent wildly on the spectator, while, as if to escape his observation, they keep repeatedly diving.

I am unwilling to abbreviate the following observations of Mr. Poole, though they in part repeat what has just been stated.

"The loons [*Colymbus septentrionalis*]‡ which frequent Wexford harbour chiefly fish in pairs, though often more than two may be seen near together, but I have never observed one bird without a second being in sight. They swim at an amazing rate when aware of being objects of pursuit, though when first approached they show but few symptoms of timidity. When diving to escape, they merely come to the surface every two or three hundred yards to breathe. I never but once knew them to resort

* Mr. R. Warren, jun. † Mr. R. Chute.

‡ The name of loon, or loom, is applied both to the great northern and the red-throated diver in Cork harbour.—Mr. R. Warren, jun.

to flight, in preference to diving, when closely pursued. In this instance I fully calculated on getting a shot at one, which I followed up a very long and narrow channel from which he could not apparently escape, but he took wing before I came within five shots of him. Considering the habits of the species, I looked upon this as the result of a train of reasoning, as in the open sea or a wider channel he would certainly have admitted a much nearer approach, and have let me get all but within shot before diving to escape. They possess considerable powers of flight, but appear rather awkward in the air, with their necks stretched straight out before their bodies like long sticks."

During days of bright sunshine in spring, when the sea was perfectly calm, red-throated divers have frequently been observed, through a telescope, in Belfast Bay, enjoying themselves after their own peculiar fashion, by turning the body slowly round, screw-like, in one direction, occasionally lolling for a time with their backs on the surface of the water, again lying upon their sides, and assuming innumerable attitudes. The first bird perceived in this state was supposed to have been severely wounded and in the agonies of death, but it was soon afterwards ascertained to be a habit of the species during the warm and genial weather of spring.*

This diver comes far up Belfast Bay, and occasionally, during the period of its stay, near to the town; I have known one to be killed some distance up the river Lagan, but within flow of the tide.

The red-throated diver varies so much in size and in its different states of plumage, that, until of late years, it was considered as constituting more than one species. Notes are before me of several specimens varying from 3 lbs. 9 oz., to 6½ lbs., though in total length they ranged only from 2 feet 4, to 2 feet 7 inches. A young bird of the year, killed in Belfast Bay, was once brought to me (February 1, 1838), after having been lightened of six young herrings from four to six inches in

* Mr. Darragh.

length. The shooter, on reaching home, hung it up by the legs near the ceiling of his room, and after it had been there for some time, was much startled, amid the silence of the place, by one herring after another gradually dropping from the throat of the bird upon the floor. Two birds killed in Larne Lough, in February, some years previously, were said to contain "sprats;" one of them three small fish, and the other six large ones, of which three lay close together in its œsophagus.

On the 13th of April (1847), a number of these birds were seen in Dublin Bay, three of which were in adult summer plumage.* So late as the 26th of May (1838), I had once the opportunity of examining a fresh specimen of this diver, purchased by Mr. R. Ball in Dublin: the notes made upon it are—

	in.	lin.
Length (total)	24	6
——— of bill above	2	3
——————— to rictus	3	0
——————— wing from carpus	10	7½
——————— tarsus	2	8
——————— outer toe and nail	3	9

The throat is only a little tinged with chestnut; bill greyish, varied with a dusky hue; irides liver-coloured—those of the living specimen already mentioned were set down as approximating the "arterial blood-red" more nearly than any other shade in Syme's 'Nomenclature of Colours,' but as being rather of a morone (brownish-crimson) hue.

This species is obtained all round the coast. Mr. J. V. Stewart, in his 'Birds, &c., of Donegal,' remarks:—"The speckled diver is very common, but the red-throated diver occurs rarely." This is of general application. The species is noticed by my correspondents as being "common" in its immature state, on the coasts of Dublin, Wexford, Waterford, Cork, Kerry, and Galway. Mr. R. Davis, jun., of Clonmel, possesses a young bird procured inland, near Cahir, by a countryman, who knocked it down with a walking-stick as it flew low over a field.

* Mr. Darragh.

Audubon gives a very full account of this diver, remarking that it is "at all times an extremely shy and vigilant bird, ever on the alert to elude its enemies. The sight of man seems invariably to alarm it, even in the wildest countries in which it breeds. I have often observed that while yet several hundred yards from them they marked my approach with great watchfulness" (Orn. Biog. vol. iii. p. 21). They are not by any means so difficult of approach on the Irish coast, though their extreme quickness of sight is very apparent.

The red-throated diver is about equally common in Ireland, England, and Scotland.

THE COMMON GUILLEMOT.

Foolish Guillemot

Uria troile, Linn. (sp.)
Colymbus troile, Linn. (sp.)

Lesser Guillemot
Uria minor, Gmel. (sp.) } Young and old in winter plumage.

Breeds at the many suitable marine cliffs around the island: some remain throughout the year.

At the Gobbins, a range of lofty basaltic cliffs outside the northern entrance to Belfast Bay, a considerable number of guillemots annually breed. They arrive generally in April, but do not lay before the end of May, when their large single eggs, and those of the razorbills, are deposited on the bare rock. In the late season of 1849, they had not commenced laying here on the 2nd of June, when the cliffs were searched for eggs.* About Carrick-a-rede, near the Giant's Causeway, I observed a number of guillemots in June 1842. At the island of Rathlin, off this coast, Dr. J. D. Marshall informs us that they "were congregated in very consi-

* Mr. Poole remarks, in reference to the Wexford coast, that he has seen their eggs on the 15th of May and 24th of June.

derable numbers on the north-western extremity of the island, where the high and precipitous rocks afford them facilities for incubation. They were not, however, so plentiful as either the razorbills or puffins, but they frequented the same rocks indiscriminately. * * * The young guillemots I had frequent opportunities of examining; they were, when excluded from the shell, covered with a dark grey down of a whitish colour underneath." The greatest haunt of these birds in the breeding season that I have visited is the extensive range of stupendous cliffs at Horn Head in Donegal, to which immense numbers resort. Situations for their nests are selected at various heights, some being low down near the sea. They are said to come here in March, and depart about "Lammas" (12th August): their eggs are stated to be deposited in clefts of the rock as well as on the "open flags." The rocks of Tory Island in this vicinity are also tenanted by these birds in summer. Between this island and Horn Head, two or three pair only were seen by Mr. G. C. Hyndman on the 8th of August, 1845; one pair was accompanied by their young, almost full grown.

At Achil, in June 1834, we learned that guillemots breed on the Bill's Rock off that island, and the limestone cliffs of Arranmore, off the entrance to Galway Bay, were found by ourselves to be tenanted by vast multitudes of them and razorbills. On the cliffs of Kerry they commonly breed, as they do on those of Cork, Waterford, Wexford, Wicklow, Dublin, &c., and the adjacent islands. In the month of July 1837, I observed them about the rocks of Ireland's Eye, off Howth; they breed at the neighbouring island of Lambay. When sailing up Dublin Bay on the morning of September 4, 1845, several of these birds and their young came under my notice.

A gentleman of my acquaintance, fishing in Belfast Bay, off Crawfordsburn, on the 28th and 29th of August, 1845, was much entertained by observing the habits of these birds and their young, of which he saw great numbers. The young were about one-third less than their parents, and uttered a shrill squeaking note, while that of the old was hoarse and guttural;—like a

croak. They admitted of a very close approach. The old birds dived several times, and on each occasion brought up a fish, which was always given to the young. The latter rested quietly on the surface of the water, and never attempted to fish for themselves, but hurried forward rapidly to their parents when they brought up any prey. Two of these birds were accidentally taken on hooks baited with herring fry.

The Rev. G. M. Black, writing from Annalong, on the coast of Down in November 1849, remarked: — "A guillemot (*U. troile*) was brought to me a short time since, which I at first thought had been wounded, as, when put down on the ground, it made no attempt either to walk or fly, but was very bold, striking hard with its bill. When I afterwards took it to the beach, within a few paces of the sea, the eager attempt to get into its proper element was very amusing, as aided both by legs and wings it shoved itself along in a most awkward way. On reaching the sea, it at once dived, rose fifty yards off, flapped its wings, and seemed well and happy; it is evident these birds cannot rise to the wing from the ground, though they make considerable flights from the sea."

Guillemots have been found washed ashore dead on the beach of Belfast Bay, after tempestuous weather late in autumn, and throughout the winter. They were in all such cases, in autumn as well as winter, extremely poor in flesh; worn almost to skeletons.

Either these or razorbills or both (the species not being distinguished) are sometimes washed ashore, dead, at Carlingford Bay, in numbers during winter. In that season, of 1847–48, "twenty-five guillemots were found dead on the Bull sand-bank, Dublin Bay. There had been a gale from the north-east continuously for some days, about a week previously."*

These birds would seem to come in spring to our shores, from localities where they are little molested, as they are then much more easy of approach than after being accustomed for a short

* Mr. R. J. Montgomery.

time to the inconsiderate and wanton annoyance they experience here. At this time, or just before taking their station at their breeding-places, they appear far up Belfast Bay, sometimes about the quays of the town, and have been killed with oars and stones; so late as April 26 (1838) they have been observed here. At the end of autumn again for a short time, as well as late in spring, they are seen far up the bay. On September 19, 1837, I obtained one (its irides were noted to be greyish-brown) in the plumage of Bewick's lesser guillemot, of which he gives an interesting account, showing it to have been an excellent and patient sitter for its picture. In the first week of October 1838, several were shot here; in 1840 they first made their appearance on the 4th of that month. A fine bird which I had weighed proved to be 2 lbs. 1 oz. In Strangford Lough I have remarked them at the beginning of October.

When about the entrance of Belfast Bay in winter, I have always observed some of these birds, and a few individuals killed there during that season have come under my notice. They have occasionally been brought from Dublin Bay to the city in winter; and, in the 'Fauna of Cork,' are noticed as "resident."

Mr. Selby is of opinion that "the colonies which had made the English coast their summer quarters, retire to more southern latitudes to pass the winter months. Their place in this country is but sparingly supplied by a few stragglers from the great bodies that, being bred in still higher latitudes, make the friths of Scotland and its isles, the limit of their equatorial migration"* (vol. ii. p. 422). This interesting view of the question is as applicable to Ireland as to Scotland, but, not being susceptible of proof, it must unfortunately remain a mere matter of speculation. The great body at least of old birds that breed upon the cliffs of Ireland

* When proceeding from East Tarbert to Greenock, on February 1, 1849, and about the entrance to Loch Fine, I saw a number of these birds, or razorbills, both singly and in pairs, and in one instance four in company. Guillemots they most probably were, but they did not come near enough on flight, or admit of such an approach when swimming, to enable me to determine their species. The headland of Oe, in Islay, and the Craig of Ailsa, may be mentioned as insular breeding-places of the guillemots known to me off the south-west of Scotland.

move with their young by easy stages southward to spend the winter. The author just quoted supplies a full and excellent account of the species, chiefly from observation at the Farn Islands, on the coast of Northumberland, one of its breeding-haunts. Mr. Laurence Edmonston gives an interesting notice of the young, and of the moulting, &c., of this bird and the razor-bill, as observed by him at Zetland.* The Bishop of Norwich, in his 'Familiar History of Birds,' treats very pleasingly of the guillemot at the South Stack, near Holyhead, one of its summer stations. Mr. Waterton devotes one of his agreeable essays (1st series, p. 153) to it, not only as observed in its breeding-haunt, but, when he was lowered down the rocks near Flamborough Head, to its nests, or rather to its eggs. Audubon (vol. iii. p. 143) descants very particularly on the loves of the guillemots, as witnessed by him during their migration, and graphically describes the species at the Murre† Rocks, near Great Macatina Harbour: he mentions a boat returning thence, after a few hours' absence, to the ship in which he was, laden with 25,000 of their eggs.

THE BRIDLED GUILLEMOT.

Ringed Guillemot.

Uria leucophthalmos, Faber.

,, *lacrymans,* Valenc.

Has been obtained on the coast.

Mr. R. Chute, of Blennerville (Kerry), shot one at Dingle.‡ Another was killed by a boating party off the Giant's Causeway

* Wernerian Memoirs, vol. v. part i. p. 22.

† This word reminds me of the name *muir-eun* (pronounced murr-yan) bestowed on this species at Horn Head, and the meaning of which, according to an Irish scholar, is simply sea-bird. *Murre* is the appellation by which the guillemot is known in Cork harbour (Mr. R. Warren, jun.), and the razorbill at Lambay. *Frowl* is said to be the name applied to the former bird in this island (Mr. R. J. Montgomery).

‡ I noticed the circumstance in the 'Annals of Nat. Hist.' for 1848, vol. i. p. 62,

in the summer of 1848, but was considered too much injured to be worth preservation.

Attention has been directed only of late years to this bird, either as a variety of the common guillemot, or as a distinct species. It differs, according to Gould, from the *Uria troile* in the "white mark which encircles the eyes and passes down the sides of the head." This author names the coast of Wales as frequented by it, to which that of Cornwall, Lincolnshire, Yorkshire, and Durham have been added in Yarrell's work. Devonshire may here be included, as one was procured at the end of January 1848 in Plymouth Sound by John Gatcombe, Esq. This gentleman having remarked the bird as apparently larger than the common guillemot (though both are described as similar in size), and as swimming in a different manner, followed in his boat, and shot it. Two others have since been obtained there, one of which, found dead soon after the first, had assumed summer plumage. In the 'Historia Naturalis Orcadensis,' published in 1848, and the 'Proceedings of the Berwickshire Naturalists' Club' for the same year (p. 275), it is mentioned as occurring on the Scottish coast. Several are said, in the former work, to have been shot in Orkney, and one, in the latter, at the Bass Rock on July 25, 1840. The boatmen knew of only one or two being killed there, but said the species was not uncommon at the Isle of May.*

The best information on this bird that I have seen, and more especially in reference to its distinctness as a species, is that by Mr. Proctor (subcurator of the Durham University Museum), published in Yarrell's work (vol. iii. p. 460, 2nd edit.). It is the result of a visit to the breeding-haunt of the bird at Grimsey, an island about forty miles to the north of Iceland, where the *U. lacrymans*, *U. troile*, and *U. Brunnichii* were found breeding in their respective quarters: they were distinguished by the inha-

new series. The letter containing this information was dated February 26, 1846; but when the bird had been killed was not stated.

* Mr. A. Hepburn; who gives a full description of the specimen obtained.

bitants as three species, and had different names accordingly bestowed upon them. The eggs of each, too, were pointed out among a number collected. The bridled guillemot is said to be abundant at Spitzbergen.

Little is known of this bird as a British, and still less as an Irish species. We must look particularly to such naturalists as visit the breeding-places of guillemots to supply us with information, both respecting the *U. lacrymans* and *U. Brunnichii*.*

BRUNNICH'S GUILLEMOT.

Thick-billed Guillemot.

Uria Brünnichii, Sabine.

Is believed to have been seen on the coast.

The only record of this bird as Irish appears in Ainsworth's description of the caves of Ballybunian on the coast of Kerry, to which Colonel Sabine contributed a brief note on the birds he had met with there in the month of July 1833. This species is simply stated to have been "recognized in flight." From almost any other person such a note would be of little value; but it will be remembered that to Colonel (then Captain) Sabine, ornithologists are indebted for placing the species, as such, on a fixed basis in his 'Memoir on the Birds of Greenland,' published in the Transactions of the Linnæan Society (vol. xii. p. 538). It was remarked by him to be in abundance in Davis's Straits, and occasionally in Baffin's Bay.

Dr. Harvey, of Cork, about the 1st of February, 1850, received a guillemot, from Youghal, that he is inclined to consider *U. Brunnichii*. His description of it is:—

"Length of bill from forehead 2 inches, from rictus $2\frac{7}{8}$ inches. Circumference of bill at angle (which is farther forward than in the common species), $1\frac{1}{4}$ inch; that

* Mr. R. J. Montgomery suspects that either of these may be found at the island of Lambay, off the Dublin coast, as the people there speak of a second kind closely resembling the common guillemot (June 1849).

of a common one measured at the same time barely an inch. It is much mottled with black and white on the flanks, and *very* black where that colour prevails."

Sir William Jardine remarks, that "Brunnich's guillemot is easily distinguished from the common species by the thicker form of the bill, and the greater angle of the mandible, and also by the much deeper tint of the head and neck, and indeed of the whole plumage."—'Brit. Birds,' vol. iv. p. 218.

This guillemot has been met with at the Shetland (Sir James C. Ross) and Orkney islands (Macgillivray) and on the coast of Caithness.*

THE BLACK GUILLEMOT.

Spotted Guillemot.

Uria grylle, Linn. (sp.)
Colymbus grylle, Linn. (sp.)

Is found around the coast, and is permanently resident.

Its breeding-haunts—generally in lofty marine cliffs—are much of the same character as those of the common guillemot, though sites of different kinds are chosen for its nests: both species are often found together at the same locality; but the black, everywhere known to me, in much more limited numbers than the other. It breeds at the places named under the latter species. About twelve pair are said to frequent the Gobbins annually. About Carrick-a-rede I remarked them in June 1842. At Rathlin, Dr. J. D. Marshall informs us that—"This bird frequents the southern or Ushet extremity of the island—a place totally devoid of any other sea-fowl—and the shores which immediately front Ballycastle, where I found them, in number about thirty, flying backwards and forwards among the rocks, where they had

* It is in a list of rare birds—some of them the rarest in the British catalogue—obtained in the county of Caithness by Mr. Eric Sinclair of Wick, and published by Mr. James Wilson, in his 'Voyage Round the Coasts of Scotland and the Isles,' vol. ii. p. 179.

established themselves. I saw only one pair on the northern shores, and could not ascertain whether they bred there or not. At their breeding-haunts on the southern shore they were very wary, and could scarcely be approached; but the day I visited the immediate vicinity of the spot alluded to, was so stormy and the sea ran so high, that I dared not keep the boat closer to the rocks, in order to examine their breeding-places more particularly. The black guillemots were easily distinguished from all the others by the dark plumage, and the white spot on the wings."

Nnumbers annually resort to the cliffs at Horn Head, and deposit their eggs "under stones out of sight and reach." They are stated by persons best informed on such subjects to remain there all the year. They breed at the Bills Rock off Achil.* The Rev. G. Robinson, who visited the western coast in the summer of 1844 in company with Dr. C. Farran, found these birds to be common in Birterbuy Bay (Galway), where his companion reckoned above sixty in company. The fishermen state that they remain during the year, and appear to be "bay birds," being seldom seen on the open sea. Their nests are placed on some of the rocky isles at or near the entrance of the bay. When rearing their young, they fly up the bay, continue fishing until sufficient food is procured, and then return to the nestlings with their burthen;—in an incredibly short time they are again busily engaged at the same occupation: this coming and going is continued throughout the day.

Mr. Robinson informs me, that they were generally wild, and would not admit the approach of a boat within sixty yards without taking flight, which was their invariable mode of escape. When pursued, they always flew towards the open sea, and by his managing to keep to the sea-side of them while in the bay, they were obliged to fly within shot of his boat, from which he killed fifteen on the 1st of August. All except one were old birds, in which the white feathers of the winter plumage were beginning to appear near the tail. When flying from the bay each had generally a

* Lieut. Reynolds, R.N., 1834.

fish in its bill;—a spotted blenny (*Blennius gunnellus*) was found in the stomach of one.

Early in July 1834, we met with the black guillemot, about the largest of the Isles of Arran, off Galway Bay, and on the coast of Clare. Mr. T. F. Neligan, when mentioning its breeding on the Kerry coast in 1837, where it then was and still is numerous, added, that, in a nest containing two eggs, which he had found, the male bird was captured, and exhibited two patches bare of feathers, caused by his incubation.* The species has been shot near Valentia Island in winter. On the coast of Cork it breeds at the Reannies, &c., in company with the common guillemot and razorbill;†—on the cliffs of Ardmore (Waterford), and others in the south, it builds; also at Bray Head, county Wicklow. On my visiting (with Mr. R. Ball) the island of Ireland's Eye, off Howth, in April 1835 and early in July 1837, and crossing to Lambay Island on the 5th of June, 1838, several were seen:—they nidify at both islands.‡ When flying, the white patch on the wing is very conspicuous.

The late Mr. J. Montgomery noted this species as "beginning to arrive after the breeding season at the bay of Strangford on the 29th of July, 1822: they were all in black plumage [therefore adults], not a grey or speckled one being amongst them." It was added, that "when rising on wing, this bird assists itself by striking the water rapidly with its feet." Specimens killed almost every year, at various times during the winter, on the marine loughs of Larne, Belfast, and Strangford, have come

* Mr. Audubon remarks—"The black guillemot, to cover her three eggs [this number he found in all of the many nests that came under his observation on the American coast], and to warm them all at once, plucks a space bare quite across her belly. * * * The males [of the black, common, and Brunnich's guillemot, as well as of the razorbill] incubate as well as the females, although the latter are more assiduous" (vol. iii. p. 145). This author, commencing at p. 148, gives a very good description of the habits, &c., of the black guillemot, marred, however, by the introduction of extraneous matter.

† Mr. R. Warren, jun.;—who has never seen more than three or four pair there in a day.

‡ Mr. R. J. Montgomery wrote to me after visiting Lambay in June 1849, that they build on the south side of the island, where there are no cliffs, but that he was unable to find their eggs.

under my own observation.* They were all in the plumage of the Greenland dove, being that of winter; but when crossing the bay from Carrickfergus to Bangor, on the 29th of January, 1835, I remarked one in its black summer attire,† as well as two more in that already named as proper to the season. On the 16th of August, 1848, an old bird, shot on the bay within a quarter of a mile of Belfast, was in full winter plumage. Dr. Fleming, in his 'History of British Animals,' remarks, that he has "observed the birds with black plumage about the end of February," and "by the end of March, they are common in this, their summer dress" (p. 135).

The stomach of one of these birds, shot in Belfast Bay about the middle of September, was filled with the remains of Crustacea. The only portions that could be determined positively, owing to the state of decomposition in which they were, belonged to the hermit crab (*Pagurus Bernhardus*) of large size.

Mr. Selby remarks, that "in the northern parts of Scotland and its isles this is a numerous species, but becomes of rarer occurrence as we approach the English coast, where indeed it is but occasionally met with; and although Montagu has mentioned it as resorting to the Farn Islands, I can safely assert that this has not been the case for the last twenty-five or thirty years" (p. 427):—the work was published in 1833. Mr. Macgillivray, describing it as a British bird, states, that "all the breeding-places are to the north of the Tweed and Solway." Sir William Jardine also notices "the coasts of the south of Scotland being near to its southern range in Britain,"‡ but mentions at the same time his having met with the species at the Isle of Man (where he believed it to be breeding), and the record of its occasional occurrence on the southern coast of England. It is interesting, there-

* Sometimes called *sea-pigeon* at Larne and at Lambay, and *parrot* at Roundstone (Mr. J. Nimmo).

† On the 12th of February, 1849, Mr. R. Warren, jun., shot one of these birds in complete breeding plumage, and saw another in the same state in Cork Harbour.

‡ 'Brit. Birds,' vol. iv. p. 221. At Islay, I saw some of these birds which were shot there at the end of December 1848.

fore, to find that this bird is not only equally common in the south as in the north of Ireland; but that it nidifies as frequently on the rocky coasts of the former as on those of the latter portion of the island.

THE LITTLE AUK.

Rotche.

Mergulus melanoleucos, Ray.
Alca alle, Linn.
Uria „ Temm.

Can only be recorded positively as an occasional winter visitant.

Its occurrence in Ireland was noticed in a communication which I made to the Zoological Society of London (Proceedings Z. S. 1834, p. 30), after having seen a specimen, which was shot at Wexford on the 26th of December, 1831, in the collection of Dr. R. Graves of Dublin. I have since learned that the species was obtained in that quarter long before the period mentioned. According to an entry in an old Donation-book of Trinity College Museum (supplied to me by Mr. R. Ball), it appears that the Rev. J. Elgee, of Wexford, "presented a bird, called the little auk or little diver (Penn. 233), driven on the coast of Wexford by the storms of January 1791."—The specimen is not now extant, but the reference to "Pennant, 233," evinces the correct application of the name to this species. In March 1834, I was informed by Mr. Glennon, that in the course of his "practice" as a bird-preserver, two recent examples of the little auk had been sent to him, the one killed at Wexford, the other at Baldoyle, near Dublin. On the 5th of December, 1835, one of these birds was found dead, but in a perfectly fresh state, at Portmarnock strand, some miles from that city. A letter from Mr. T. W. Warren, dated October 16, 1841, announced that he saw on that day at Glennon's shop three little auks, which were shot by Mr.

Beggs, of Borris Castle, Borris-in-Ossory,—on the eastern borders of Queen's county;—a place in the middle of the island, almost equally distant from the Irish Sea and the Atlantic Ocean. About the same time a specimen was picked up dead, but quite recent, on the strand, Dublin Bay. In October 1841, another of these birds, taken on a pond near Pilltown, county Kilkenny, along with some wigeon and teal, came into the possession of Dr. Burkitt of Waterford. Thus about the same time, the little Auk was obtained in three counties in the southern half of Ireland, a fact which immediately suggests its occurrence in unwonted numbers in England. By turning to Yarrell's work, we find (vol. iii. p. 359) that the species prevailed there to an extent never known before, having been met with that month, after a prevalence of storms from the N.N.E., over a great part of the coast from the county of York to Sussex. About, or soon after this time, numbers were also taken in the inland counties. On other occasions, this bird, like the stormy petrel, (though not so often,) has been found dead far inland in England, where it has also been observed, occasionally, on ponds. A pair of little auks were once seen in Cork harbour by Dr. J. R. Harvey.

"Guillemots, common, black, and alba [*alle**]," are mentioned by Colonel Sabine, in the Appendix to Ainsworth's Description of the Caves of Ballybunian, in Kerry, as having been seen there by him on wing in July 1833. From the bird being observed at this period of the year, we should like to be informed if it breeds there; but it is not mentioned as doing so in the communications with which I have been favoured by the late Mr. T. F. Neligan of Tralee, or Mr. R. Chute of Blennerville, in that neighbourhood. The former gentleman merely remarked (Feb. 1837), that a specimen which he had seen was captured on a fresh-water lake, a quarter of a mile from the sea, near Valentia; the latter obtained three or four individuals on the coast of Kerry in the winter of 1842–43.

A little auk, in adult summer plumage, was obtained either in Belfast or Strangford Lough, more probably in the former, on the

* Having called the attention of Col. Sabine to the apparent misprint of *alba* for *alle*, he informed me that the latter was meant.

22nd of May, 1846.* In connection with the occurrence of the bird at this season of the year, it may be mentioned that Mr. Darragh (of the Belfast Museum) when paying an ornithological visit to the Craig of Ailsa, off the coast of Ayrshire, on the 19th of May, 1849, saw four little auks. "One of them remained on the water at the base of the Craig until approached by the boat, within about eighty yards, when it flew off in the direction which its three companions had taken a minute before." Their being seen at this fine breeding-haunt of "rock-birds," inclusive of the gannet, in the middle of May, suggests the probability of their nesting here; though the species is not positively known to do so on any part of the Scottish coast. At St. Abb's Head it has been said to breed.† It is generally regarded as only a winter visitant to the British Islands.‡

It will have been remembered by ornithologists in connection with Colonel Sabine's statement of seeing this bird on the coast of Kerry, that he was particularly well acquainted with the little auk. In his 'Memoir on the Birds of Greenland,' published in the twelfth volume of the Transactions of the Linnæan Society, he observes that it "was abundant in Baffin's Bay and Davis's Straits; and in latitude 76° was so numerous in the channels of water separating fields of ice that many hundreds were killed daily, and the ship's company supplied with them" (p. 537). Capt. Beechey, in his account of the voyage towards the North Pole in 1815, while describing the scenery of Magdalena Bay, a commodious inlet on the western side of Spitzbergen, remarks,—"At the head of the bay there is a high pyramidal mountain of granite, termed Rotge Hill, from the myriads of small birds of that name which frequent its base, and appear to prefer its environs to any part of the harbour. They are so numerous that we

* Mr. R. J. Montgomery mentions two birds as shot near Howth some years ago, and one individual having been seen by him in the river Boyne, near Drogheda, in the winter of 1849–50.

† Mr. Macgillivray was informed to that effect. 'Manual of Brit. Birds,' vol. ii. p. 215.

‡ Yarrell, &c.

have frequently seen an uninterrupted line of them, extending full half-way over the bay, or to a distance of more than three miles, and so close together that thirty have fallen at one shot. This living column, on an average, might have been about six yards broad and as many deep. There must have been nearly four millions of birds on wing at one time." These extracts show that the individuals occurring in the British seas are mere stragglers from "high quarters."

Audubon gives a very pleasing account of this species, as observed during his voyages across the Atlantic. 'Orn. Biog.' vol. iv. p. 304.

The following note was received too late to be printed in its proper place, at p. 208:—"Guillemots and razorbills breed in considerable numbers in holes at inaccessible parts of the cliffs between the Reannies and Sovereign Islands on the coast of Cork. The former are much more numerous than the latter, and flock more together. About fifty feet above the water at Reannie Bay there is a small cave in the perpendicular cliff, three or four feet in diameter, out of which thirty or forty guillemots commonly fly when a shot is fired from a boat."*

THE PUFFIN.

Sea Parrot; Coulterneb.†

Fratercula arctica, Linn. (sp.)
Alca „ „
Mormon fratercula, Temm.

Is a regular summer visitant to each side of the island.

The islets called the Maiden's or Hulin rocks, off the entrance to

* Mr. R. Warren, jun.

† Tammie Norrie, provincially in Scotland. By this name it is alluded to by Sir Walter Scott in the grand scene in the 'Antiquary,' in which the baronet and his daughter are near being lost upon the sea-coast.

Larne Harbour, county Antrim, are said to have been resorted to by numbers of these birds, annually, for the purpose of breeding, until of late years, when, owing to the erection of lighthouses, the puffins ceased to visit them.* One of the names by which they were known there, and at the Gobbins, where they occasionally appeared, was *Ailsa-cock*, an appellation applied to them in the south-west of Scotland, and derived from their haunt on the Ayrshire coast.† Dr. J. D. Marshall, who visited the island of Rathlin, off the Giant's Causeway, in June 1834, informs us that —"These birds breed in great numbers at the Bull Point and headlands adjoining, where the rocks are based with mould, and intersected and covered here and there with patches of grass; thus affording them facilities for scooping out their nests. These we found wherever the earth appeared among the rocks. They excavate or burrow in the mould to the depth of two or three feet; and, at the extremity of the excavation, the egg, which is white and about the size of a hen's, is deposited on the bare earth.‡ From being surrounded by the damp mould, it appears, when taken from the hole, of a dirty brown, but, on being washed, acquires its natural colour. The puffins seemed equally numerous as the razor-bills; they took possession of the earthy parts, while the latter sat close beside them on all the bare ledges of rock not otherwise occupied. These birds, with a few guillemots, were met with in considerable numbers along

* So early as the 24th of June, 1848, I was surprised to observe a young puffin of almost full adult size among the rejectamenta of the sea at Craigavad, Belfast Bay. Though exhibiting no appearance of having been injured, it remained within a yard of me, regardless of my presence, for a few minutes; but the sight of my dog running towards me frightened it out to sea.

When crossing from Groomsport to the Mew Island, at the entrance of this bay, on July 16, 1850, we saw two of these birds in company on the water, one of which flew off at rather too great a distance to be fired at; but the other, not following its example, was shot. It proved to be a young bird of the year, and appeared equal in size to the other, which was probably its parent, as the bright orange red legs marked it to be an adult when it rose on wing. The young bird had pale flesh-coloured legs, and its bill had not attained full size.

† The promontory of Oe, in Islay, is also annually visited by puffins.

‡ I learn from Dr. Marshall, that the puffins' burrows here must have been of their own making, the place being of such a nature that rabbits could not get either up or down to feeding-ground from it.

the range of white cliffs facing the south, and forming the northern boundary of Church Bay; they were not, however, by any means so numerous as on the northern side of the Bull Point. The opinion prevails here, as elsewhere, that the puffins feed their young with sorrel, when they become, as it is stated, too fat to allow them to make their escape from their burrowed nests. This idea I conceived might have originated in consequence of the quantity of the plant not unfrequently found growing, as at Rathlin, in the vicinity of their nests."*

Of the *Alcidæ* which frequent the high rocky parts of the coast of Ireland annually for the purpose of breeding, the puffin is the most select as to locality; the guillemot, razorbill, and black guillemot being frequently found where it is not;—those three species also being usually met with at the same place. The greatest haunt of the puffin and rock-nesting birds generally which I have visited about midsummer, is the magnificent range of cliffs, miles in extent, in the peninsula—"island" it is called—of

The Horn, in Donegal,

on and about which I spent the week ending the month of June, 1832.† I shall therefore copy some of my notes on the birds of the locality, that an idea may be formed by persons who have not visited such haunts, of the species found there.

By the philosophical student of Nature, however, the mighty scene before him, comprising earth, ocean, sky, each in its sublimity, will be considered before he turns his attention to its beautiful adjuncts;—the feathered race. Its physical geography, as his

* In the 5th chapter of a very interesting series of papers by Hugh Miller, published in the 'Witness' newspaper (April 12, 1845), entitled, "A Summer Ramble among the fossiliferous deposits of the Hebrides," it is mentioned that the islanders of Eigg believe the old puffins to administer sorrel-leaves to their young for the purpose of reducing them in size, and enabling them to get out of the burrows when their wings are fit for use. It is believed that the nestlings become so fat, that but for this remedy they would be incapable of leaving their birth-places.

† The map of the Society for the Diffusion of Useful Knowledge gives "Horn Head 307" yards, or 921 feet; but this probably applies to the highest hill of the peninsula. "Cliffs 235" yards or 705 feet in height are, however, indicated. In the first volume of this work I mentioned Horn Head as attaining nearly 600 feet, on the authority of a nautical survey made in 1832 or 1833, in which it was noted as 580 feet.

eye takes in the vast extent of country, nearly all in its original wildness, will first be viewed, and the geological age of its various portions speculated on, vaguely though it may be, from the form of its hills, cliffs, and mountains, and the changes will be noted that are at the present time in progress. At one place he will perceive that the land is gaining on the ocean, and at another, yielding to its assaults. The leading features of the prospect, viewed from the heights of the peninsula, are wild and fine in the extreme, ranging from Malin Head, the most northern, to Bloody Foreland Point, the north-western extremity of Ireland. Off the land towards the latter lie four small islands, the one nearest to it displaying cultivation, the next, pasture green as emerald, the third—and I believe fourth also—sterile rock. Northward of them is the much larger island of Tory, whose ancient history holds a prominent place in the archæological annals of Ireland. It is of most picturesque profile, with its northern extremity rugged as the dilapidated ruins of a time-worn castle. Inland, the mountain of Muckish appears a few miles distant, and, more remote, the grand conical chain of mountains, finer in form, than great in altitude, of which Errigal (2,460 feet in height) is the chief. The general features of the vegetation clothing the earth will be botanically viewed, with at the same time its pictorial effects, from lofty mountains on whose summits the true alpine plants find a home, to the low and barren sand hills which skirt a large portion of the coast. The vast extent of sky, exhibiting perhaps at the same moment every form of cloud to which science has applied a name, will next arrest attention; so much being within view, that the spot occupied by the spectator may remain all day in brilliant sunshine, although thunder-clouds, "dark as Erebus," appear at a distance, and peal forth their sublime volleys, while both sheeted and forked lightning play in as fiery intensity as in the gloom of night amid their intense blackness;—a hue unseen elsewhere than in such scenes.

The illimitable ocean—"a world of wonder in itself"—will then claim his admiration. On its distant waves a few "labouring barks" will probably be seen, for on a vast expanse of water their

motion, however great in reality, appears but slow; nearer, groups of porpoises or grampuses may exhibit their dorsal fins above the surface as they proceed on their rolling course; or aloft, the gannet majestically poise himself ere he strike into the deep. That beautiful sight, a "play of gulls," will doubtless be witnessed at one or more parts of the surface to which shoals of small fish have arisen. Landward, the rapid flight of innumerable little parties of guillemots, razorbills, and puffins, as they fly, chiefly in single file, to or from the cliffs, or over the sea, will be observed. In purity of hue, similar to, and in number less only than the flakes of a snow-shower, the gulls, roused off their eggs or young, appear from base to summit of the cliffs, while jetty cormorants, with necks straight-outstretched, fly to their congregated nests. The blue rock-dove will be seen on wing to and from the caverns, and perhaps the dark-hued peregrine falcon, or the eagle, making a death-swoop in the vicinity of its eyrie. Any description of the effect of the mingling voices of myriads of birds of various species, in such a scene, would be vain.

On the 28th we had the gamekeeper at the Horn lowered down the precipitous cliffs to the eastward of Horn Head, to a nest of the sea-eagle, from which he brought up two eaglets;—the particulars of the exploit have been described in Vol. I. p. 15. On the following day we went to the cliffs adjacent to the eagle's eyrie, in the hope of procuring young peregrine falcons, but were unsuccessful, in consequence of the rock projecting so much above the nest as to render it unapproachable: we saw the old pair of birds. A mile westward of the Head, a colony of cormorants (*Phalacrocorax carbo*) came in view, their nests being placed on the broad and flat top of a jutting rock, or "bench," as it is here called, on the sea-side of the Temple Brig. This "temple" is a rocky headland, standing out to sea, and pierced entirely through by a lofty arch whose base is washed by the ocean; hence it bears the name of the Temple "brig," or bridge;—the arch is sometimes called also "the door" of the Temple.

As noted when looking down upon the colony at the dis-

tance of perhaps fifty feet;—nearly all these cormorants are seated on their nests, about forty in number. These are very large, and composed of the roots or "runners" of the sea lyme-grass, *Elymus arenarius*, which is abundant on the neighbouring sands. They are lined with the leaves of the same plant, and placed close together, but without touching each other. All the old cormorants are wholly black, no white patch behind the thigh or elsewhere, and no appearance of a crest.* The usual number of young birds is three, which are yet very small. They are all black, and exhibit already a ludicrously capacious gape. In some nests there are eggs without spots or markings of any kind; in colour and form like those of the common duck.† Temple Brig and the slope above it are entirely covered with fine soft cushions of the thrift, or sea-pink (*Statice armeria*), now exhibiting in profusion, from each verdant mass, its fine rose-coloured flowers. The ox-eye, or white chrysanthemum (*Chrysanthemum leucanthemum*), grows abundantly, and is in full bloom on the little patches of earth that rest on the face of the cliffs eastward of the Temple. Looking in this direction, kittiwakes (*Larus rissa*) in thousands are seen at one view upon their nests, which are placed in single rows on all the narrow horizontal shelves of the mural cliffs that afford sufficient depth, from the sea upwards, half-way to the summit; every available spot is thus occupied. The nest is very large, round in form—circular within—and fully three inches in thickness. It is apparently composed of the *Elymus arenarius*. The birds are as close together on their nests as they can sit, and the lines of snowy whiteness—of various length—which they present against the grey sterile surface of the cliffs have a very singular appearance, as strata of flints in a limestone quarry are not more horizontally disposed. When the birds stand up, and only then, for not one is absent from its nest (now mid-day), the young can be seen, which are brownish-grey in colour,

* In the plumage of Bewick's "Corvorant," as opposed to his "Crested Corvorant," which is the same species in spring plumage.

† Not less than a hundred cormorants were observed here, arranged in single file on the rocks, on the 1st of August, 1850.—(Mr. R. Taylor.)

and none of them larger than newly-hatched chickens. Some of the old birds, as if to exhibit their happiness, assume towards each other loving attitudes, like those of doves when cooing. There is a complete line of demarcation between the nesting-places of the kittiwake and the herring-gull (*Larus argentatus*), those of the latter being above the others, and the nests much farther apart; indeed, the herring-gull, though plentiful, is less numerous than the smaller species. From the summit of the cliff, where it approximates 500 feet in altitude, many eggs of the razorbill are on the bare rock two or three yards below me, while the birds themselves keep flying in and out of crevices towards the summit of the rocks, within which their young are at such a distance that they cannot be reached by the hand. Immense numbers of puffins breed here, and they afford me an excellent and near opportunity of observing them, as, within a yard of the summit, many appear on the flat ledges of rock, while others come flying up from the sea and alighting beside them, quite regardless of my presence. A few yards down, others are seen at the entrance of holes, like rabbit-burrows, though really their own perforations. An immense bank of loose sandy earth shooting down almost perpendicularly towards the sea, was drilled by them so as to resemble a gigantic dove-cot. Every bird of the myriads that I see of various species, excepting nestlings, is in full adult plumage.*

A puffin, shot here yesterday, was bearing to its mate or young, six fish, five of which were young *Clupeæ*, nearly six inches in length, and the other, a sand-eel of large size. Several more were remarked to be similarly well laden, and one bird had hold of a fish nearly the size of a full-grown herring;—ornitho-

* On examining the colour of the irides of the birds shot to-day, just as they were killed, I found those of the puffin, razorbill, and common gull (*Larus canus*), to be greyish-hazel; of the chough, black; oyster-catcher, black, surrounded by a bright red ring, as well as having the eyelid of that colour; common tern (*Sterna hirundo*), blackish; rock-dove (*Columba livia*), whitish-brown. The irides of a young cuckoo, of adult arctic terns and kittiwakes, shot on the 12th of July, 1833, at the Skerries, off Portrush, were of a very dark brown colour.

logists, generally, mention one fish only as borne by the puffin at a time.

Other species are seen as we proceed, though some which nidify at particular parts of the rocks and in caves, do not come in view from the summit of the range of cliffs. The common guillemot (*Uria troile*) breeds in profusion; the black guillemot (*Uria grylle*), in its usual comparative numbers to the former; the lesser and greater black-backed gulls (*Larus fuscus* and *L. marinus*), both of which came under our notice, are said to build here. The common gull (*L. canus*), too, probably nidifies, from the circumstance of adult birds (with bright yellow legs) being now here, of which we shot two or three, to make sure of the species, as they flew up from the face of the cliffs. The shag, or green cormorant (*Phalacrocorax graculus*), is stated by the gamekeeper to breed, perhaps to the number of three hundred, and, different from the common species,* to build out of sight, within the clefts of rocks.†

* Two gentlemen, who went round the base of the rocks about the 10th of June, stated, that they saw both species of cormorant sitting on their nests within the caves.

† The following information, which is generally, if not critically correct, was supplied by the gamekeeper and another person well acquainted with the birds here. The razorbill, puffin, and common guillemot arrive at the same time (in March) and depart about "lammas" (12th August);—the first-named breeds about the 12th of May. Each species lays one egg, which, as to size, colour, &c., was correctly described; the razorbill's is laid in crevices as well as on the open shelves of rock; the puffin's is deposited on dried sea-weeds under stones or in rabbit-holes, always out of sight, and sometimes beyond reach; the guillemot's is laid in clefts or on open flags. The eggs of the black guillemot are laid under stones out of sight and reach; the bird itself remains during the year. The greater and lesser black-backed gulls breed here, make large nests, and, like the herring-gull and kittiwake, lay three eggs each;—the common gull had not been satisfactorily distinguished from the others by the persons questioned. The eggs of all the gulls were described of a "brownish-green colour with black ticks," differing in size according to the relative dimensions of the birds. Common cormorants breed in company on open flags in May, laying three eggs; the shag lays in the same month in clefts of rock out of sight. Of the following four species, the common guillemot is said to breed nearest to the water, the razorbill next, kittiwake third, and puffin fourth. This may be generally correct, but it does not accord with my own limited observation at the locality, which was unfortunately confined to what could be seen from the summit of the cliffs. Although the weather during the week I spent there was remarkably fine, the circumstance of the little wind that there was, blowing upon the land, rendered it imprudent, according to the boatmen, to attempt going

Among the land-birds frequenting and building in the cliffs that rise direct from ocean, are the innocent and handsome house-martin, which, from its diminutive size compared with that of the other feathered inhabitants of the place, almost appears, while silently floating on the air about the summit of the stupendous precipices, as some graceful form of the insect world. The chattering jackdaw and the chough, with the kestrel, peregrine falcon, and sea-eagle, are to be seen here. Of the last-named noble species, five old birds—all now on the Horn—came under my notice to-day, and for a long time I had an excellent and near view of three of them, both on the ground and on wing. The common buzzard, the raven, and the grey crow (*C. cornix*), seen by us on the Horn, doubtless all build amid the marine cliffs;—of the last-named we saw a dense flock of about forty on the 27th of June. The starling nidifies on some of the lower rocks of the Horn, and the rock-dove in great numbers within the ocean-washed caverns.

Oyster-catchers are said to breed in some places on the rocky flattened summits of lofty cliffs, perhaps 350 feet in height, on which numbers of them appeared.

On referring to the descriptions of similar haunts of rock-birds on the coasts of England and Scotland, visited by Mr. Waterton and Mr. St. John, we learn, as follows. In the vicinity of Flamborough Head, the former author (himself characteristically lowered down the cliffs) met with razorbills, guillemots, puffins, kittiwakes, cormorants, and shags; and the land-birds breeding there were peregrine falcons, ravens, jackdaws, starlings, and rock-doves.*

At the island of Handa, off the western coast of Sutherland, Mr. St. John noticed all the preceding species, with the exception

round the base of the rocks. The kittiwake breeds so low down, that, after a great storm, the gamekeeper has seen as many of these birds washed ashore dead as would fill several carts;—from what I myself saw of their breeding-places, and the vast number of birds, this would doubtless occur.

* 'Notes on the Haunts of the Guillemot, &c.,' in 'Essays Nat. Hist.' vol. i.

of the shag, jackdaw, and raven; starlings, though building in great numbers amid the deserted tenements of man on the island, are not named as frequenting the cliffs for that purpose. The birds seen here, and not at Flamborough Head, were the greater and lesser black-backed gulls and the sea-eagle!* Although it is possible that all the birds frequenting those localities may not have come under the notice of the respective authors, yet it is a striking and interesting circumstance that, at Horn Head, and the adjacent range of cliffs, every species named as breeding about the Yorkshire and Sutherlandshire haunts is found, and in addition to them nine others, namely, the black guillemot, the herring and common gull—the oyster-catcher—the house-martin, grey crow, chough, buzzard, and kestrel.

The birds now snared, or "dulled," as it is called at Horn Head, for the sake of their feathers, are puffins, razorbills, guillemots, and kittiwakes;—all the other species of *Larus* are too wary to be thus *gulled*. In less than two hours my informant has snared seventeen dozen, or above two hundred birds, and thirty-six dozen were known by a gentleman of my acquaintance to be taken within a similar time by two men: many years ago these feathers produced 13*d*. per lb., but now (1832) they bring only 6½*d*. Birds breeding in caves here are sometimes caught in nets drawn across their entrances. They are alarmed on their nests or roosting-places by loud shouting or the firing of guns within the cave, and, when endeavouring to make their exit, are captured. On particular inquiry of bird-catchers who are natives of the Horn, I was told that from four to six persons have lost their lives by this dangerous occupation within the preceding twenty years. When, in June 1834, at a breeding station of rock-birds on the largest of the South Islands of Arran, off Galway Bay, similar to the Horn, we learned that birds are in like manner snared for the sake of their feathers, and that a man assisted by a boy had thus taken three hundred razorbills in one night. Willughby, nearly two centuries ago, with reference to the Isle of Man, remarked—the Manks-

* 'Tour in Sutherland,' vol. i. p. 100.

men "take the birds [razorbills, guillemots, and puffins] themselves when they are sitting upon their eggs, with snares fastened to the top of long poles, and so put about their necks" (p. 324). Mr. John M'Gillivray, in an excellent paper on the Birds, &c. of St. Kilda, published in the 'Edinburgh Philosophical Journal' for January 1842, mentions the puffin, by far the most abundant species of bird there, being captured in a similar manner, and that by such means "as many as three hundred may be taken in the course of the day by an expert bird-catcher" (p. 67). He visited the island in July 1840. Mr. James Wilson, who did so in August 1841, gives a very full and interesting account of the island in his 'Voyage Round the Coast of Scotland and the Isles,' and mentions a more ingenious device for capturing puffins. He says—"These birds are caught by stretching a piece of cord along the stony places where they chiefly congregate. To this cord are fastened, at intervals of a few inches, numerous hair nooses, and from time to time, when the countless puffins are paddling upon the surface, in go their little web feet, they get noosed round the ankle, and no sooner begin to flap and flutter than down rushes a ruthless widow woman, and twists their necks. Her dog had acted a useful part, not only in driving more distant, or otherwise inaccessible birds, from their roosting-places towards the nooses, but by catching them dexterously in its mouth." The widow here alluded to lived chiefly on the puffin in its season here.

The statement of the gamekeeper and others at Horn Head respecting the puffins' departure about the 12th of August, is, doubtless, correct in general terms. Only about half-a-dozen birds were observed on the sea between that headland and Tory Island on the 8th of August, 1845;* and on the 1st of that month in 1850, a few only came under the notice of a gentleman walking along the summit of the whole range of cliffs.† Many specimens of the razorbill have been procured in that

* Mr. G. C. Hyndman. † Mr. R. Taylor.

neighbourhood at different periods during winter.* Willughby (p. 326), Pennant (p. 433), and Montagu (Orn. Dict.), under the head Puffin, describe it, the guillemot, and razorbill, as summer visitants only; but later writers mention the occasional occurrence of the two latter species on the coasts of Great Britain in winter:—on the Irish coasts they are both then met with. Mr. Selby considers such birds to have been bred in higher latitudes, and that all produced on the British coasts retire farther southward.

At Horn Head, I was told by the gamekeeper, who had visited Tory Island, that puffins, as well as razorbills and guillemots, with kittiwakes and herring-gulls, build there. Lieut. Reynolds, R. N., informed us, when at Achil in June 1834, that puffins nidify in immense numbers on Bills Rock, near that island; —the greatest breeding-haunt of rock-birds known to him off the coast of Mayo.† It presents, from the coast, a very similar appearance to Tory Island. The late Mr. John Nimmo, of Roundstone, county Galway, mentioned a similar fact with regard to a locality of the same name, about twenty miles off the coast; but I understood him to mean a different islet from that just alluded to. He stated that the puffin was there called *Bill*—a name to which the dimensions of that organ, and its peculiar construction, eminently entitle it. The bird is seen there only in summer.

The Kerry islets, frequented by the puffin for building, are Tearaght Rock, off the Blaskets,‡ the large Skellig, where a few, and the small island of the same name where immense numbers, nidify§:—but at the Bull Rock, off the coast of Cork, they are said to be still more numerous.‖ They come annually to the coast of Waterford at Ardmore, according to Mr. R. Ball, who, about the year 1821, found a great many washed ashore dead at

* Mr. J. V. Stewart.

† Razorbills, common and black guillemots, cormorants, kittiwakes, and herring-gulls also breed here.

‡ Mr. W. Andrews.

§ Mr. R. Chute.

‖ Mr. J. F. Townsend.

Youghal, after a severe storm; — none of them exhibited any wounds. On this subject it is remarked by Willughby,—"If that season happen to be stormy and tempestuous, and the sea troubled, there are abundance of them found cast upon the shores, lean and perished with famine. For they cannot, unless the sea be calm, either proceed in their journey, or fish for their living" (p. 326). Mr. Poole observes, that "puffins breed at the Saltees, off the Wexford coast, but bear no proportion for numbers to the kittiwakes and razorbills. They are very vicious when taken alive, and can deal a most excruciating pinch with their bills. About the middle of May they appeared to be in greater numbers than at a later period."

Rutty, in his 'Natural History of Dublin,' states, that the "puffin is found at Lambay, and is a bird of passage appearing in April and May, and going in July or August." It breeds at the present time (1850) on this island, but from increasing persecution the numbers have been much lessened of late years. On Bird Island (opposite Kirkcubbin) in Strangford Lough, containing little more than a rood of ground, and a very dry gravelly spot covered with herbage, a puffin's nest was found in the middle of July 1843. The eggs, two in number, were deposited in a hole about a foot from the surface. The bird itself was frequently seen on the nest and flying from it, but the one individual only was ever observed.* This solitary nest is a remarkable instance, the puffin being gregarious in the breeding season, and no haunt being nearer than about thirty-five miles. The species was never known to nidify here before, an inquiry which I was particular in making, lest this nest might be the last of a colony that had gradually died out there, or had changed to more favourable quarters. Such a site being chosen for the nest is not unprecedented. Dr. M'Culloch, in his description of the Flannan Isles, remarks:—"Various sea-fowl, of the species usually found in these seas, have here established their colonies; but the most numerous is the puffin. These literally

* Mr. Francis Rankin.

cover the ground, so that when on the arrival of a boat they all come out of their holes, the green surface of the island appears like a meadow thickly enamelled with daisies. The soil is so perforated by their burrows, that it is scarcely possible to take a step on solid ground."*

Pennant remarks, with reference to Priestholm Island, off the coast of Anglesea:—"The first young are hatched the beginning of July, the old ones show vast affection towards them, and seem totally insensible of danger in the breeding season. If a parent is taken at that time, and suspended by the wings, it will, in a sort of despair, treat itself most cruelly, by biting every part it can reach; and the moment it is loosed, will never offer to escape, but instantly resort to its unfledged young: but this affection ceases at the stated time of migration, which is most punctually about the 11th of August, when they leave such young as cannot fly, to the mercy of the peregrine falcon, who watches the mouths of the holes for the appearance of the little deserted puffins, which, forced by hunger, are compelled to leave their burrows." This passage is commented on by Mr. Blackwall, in connection with the desertion of their young by the *Hirundines*.† The causes, as they appear to me, which lead to such desertion, have been assigned in the first volume (p. 382) of the present work, and are equally applicable to the puffin. Audubon remarks on the adults that he "observed with concern the extraordinary affection manifested by these birds to each other; for whenever one fell dead or wounded on the water, its mate, or a stranger, immediately alighted by its side, swam round it, pushed it with its bill as if to urge it to fly or dive, and seldom would leave it until an oar was raised to knock it on the head, when at last, aware of the danger, it would plunge below in an instant."—'Orn. Biog.' vol. iii. p. 107. This author gives the fullest and most interesting account of the puffin I have read. His opportunities of observing it, especially at Perroket island—(doubtless so called from

* 'Western Isles of Scotland,' vol. i. p. 198.

† 'Researches in Zoology,' p. 121.

this bird, the "sea-parrot" of our own coast,)—where it breeds in myriads, has exceeded those of ornithologists on this side of the Atlantic.

THE RAZORBILL.*

Alca torda, Linn.

Black-billed Auk. } Young, and old in
Alca pica, Linn. } winter plumage.

Visits annually, for nidification, lofty cliffs around the coast.

This species and the common guillemot are found so much together in their breeding-haunts, that what has been said of those of the latter bird will be found almost equally applicable to the razorbill. It breeds at the Gobbins, but in greatly diminished numbers of late years, owing to persecution. About a hundred pair were seen by an ornithologist here one day in June 1847, and many more were doubtless out at sea. They kept in flocks on the cliffs (where twelve were killed at one shot) as well as on the water. They proceed in bodies from the rocks to the sea every morning, but not at an early hour. Though generally arriving in April, they do not breed before the end of May;—in the late season of 1849, they had not commenced laying on the 2nd of June, upon which day the rocks were examined for their eggs. In that month of 1842, I observed some of these birds at Carrick-a-rede, in the north of the county Antrim. Dr. J. D. Marshall informs us that at the end of June 1834, "this auk was found associated with the foolish guillemot in countless numbers on the northern shores of Rathlin. It was, however, much more plentiful than the guillemot, but so much resembling it in general appearance, that, by the boatmen, they were invariably confounded, and, while sitting on the rocks, regarded as belonging

* Called puffin at the Gobbins (co. Antrim), &c., where the bird properly so called bears the name of Ailsa-cock.

to the same species. The cry of the razorbill auk is a kind of croak, harsh and disagreeable; and by an imitation of it, the birds are drawn out from their lurking-places behind the ledges of rock, by the fowlers. The egg in size and markings resembles that of the guillemot; the young were covered with dark grey down, the bill slightly hooked at the tip, but not presenting the peculiar marks which characterize that of the adult."*

Some particulars of this species at Horn Head are noticed under "Puffin." I have been informed that it breeds, westward, on the Bills Rock, off Achil, and that great numbers frequent the Galway and Kerry coasts in summer and autumn; in the latter, the Magharee islands, Tearaght Rock, and both the Skelligs are among the localities. Smith, in his 'History of Cork,' remarked that—"The razorbill brings up its young on the ledges of the craggy rocks near the sea," and, in his 'History of Waterford,' that "they frequent our shores in winter:" the species is noticed also in Rutty's 'Natural History of Dublin:'—on the marine rocks of those counties it still continues to nidify. A correspondent has often shot the young on the Dublin coast in winter, but never the old.† On the 22nd of February and 7th March of different years, I have received adult birds from the coast of Down, and a month after the latter date, in Dublin. On the coast of Donegal specimens have been obtained in winter, but it is not stated whether old or young;‡ the same may be said of Bantry Bay.

The razorbill, like the common guillemot, appears far up Belfast Bay, near to the town, late in spring and autumn, and more especially if the weather be calm. During the summer it is seen about the entrance of the bay. When crossing from Groomsport to the Copeland Islands, on the 16th of July, 1850,

* At the Mull of Oe, in Islay, the nearest land northward of Rathlin, razorbills have a breeding-haunt.

† Mr. R. J. Montgomery. One of the young—an *Alca pica*, or black-billed auk—is mentioned by Mr. Templeton as received by him in Belfast on the 28th of January, 1811.

‡ Mr. J. V. Stewart.

we saw numbers of these birds, both on the water and on wing;—flying just above the surface, and in single file, when a few only were together. They were chiefly in little parties of from two to seven; but one flock of about thirty birds appeared, two-thirds of which only proceeded in a single line. Such are their usual modes of flight, according to numbers. We were interested by observing a young bird of the year (the only one seen) in company with its parent, with which it kept pace in swimming and diving, though only half adult size. They admitted the approach of our boat within from twenty-five to forty yards before diving or taking wing. Birds thus frequenting the open sea may have their nests at the Gobbins, Ailsa, or other places to which they have a direct flight above the water, but during the breeding season some may also be observed in land-locked localities, such as Strangford Lough, &c. We saw but one common guillemot today, which was on wing in company with a razorbill. Just after the breeding season in 1831, birds of this species were very plentiful, and appeared as far up the estuary as within three miles of the town;—many were shot; a number killed with oars; and some run down by boating parties, and captured with the hand. Four specimens, shot here on the 28th of September, were found to contain only the remains of fish.

The head of an adult razorbill, shot in the month of June 1838, at the extremity of Lough Derg, near Portumna, was sent to me, as that of a bird quite unknown to the people there. It was, indeed, the first instance known to myself of the occurrence of the species on fresh-water, in Ireland. This specimen was said to have exhibited no appearance of having previously been wounded.

Montagu, writing from Devonshire, remarks that "the razorbill is not seen with us in winter," and Selby observes, with regard to the birds bred in Great Britain, that "in winter their place is supplied in Scotland, and sparingly also along the English coast, from the colonies that breed in higher latitudes" (p. 436). Audubon gives a good personal narrative of his visits to the razorbill's breeding-haunts on the coast of North America (vol. iii. p. 112).

THE GREAT AUK.

Alca impennis, Linn.

Is of extremely rare occurrence.

One individual was noticed by me in the 'Proceedings of the Zoological Society' in 1835 (p. 79), as taken on the coast. It was preserved in the collection of Dr. Burkitt, of Waterford, who has contributed the following particulars. He received the bird on the 7th of September, 1834, from Mr. Robert Davis, jun., of Clonmel, who stated that it was taken in the preceding month of May (by the fisherman of whom he purchased it), at a short distance from the shore, at the mouth of Waterford Harbour, off Ballymacaw. According to the captor, it was apparently almost starved. When in his yawl off the coast, he saw the auk swimming about near him, and held out some sprats, for which it came close to the boat. It was taken with little difficulty. He kept it for some days, feeding it chiefly with potatoes mashed in milk, which were partaken of greedily. After having the bird for ten days, he sold it to Mr. Davis, by whom it was sent to Mr. Gough, of Horetown, county Wexford, where it lived for about four months. For a considerable time, perhaps three weeks, it was not known to eat of anything at its new destination, but potatoes and milk were then forced down its throat, from which time it ate voraciously, until a day or two before its death. This auk stood very erect, and frequently stroked its head with its foot, especially when any favourite food was presented. When in Mr. Gough's possession, it was chiefly fed on fish, of which fresh-water species (trout, &c.) were preferred to sea-fish: they were swallowed entire. It was rather fierce.

The following description was, at my request, kindly supplied by Dr. Burkitt at the same time. "This bird—a young female—is not in good plumage; the head, back, wings, legs, and feet, are sooty black; between the bill and eye on each side of the head there is a large patch of white, mottled with blackish feathers; the neck is white, slightly mottled with black; the front of the body white; the lesser quills tipped with white.

	Inches.
" Length (total); tail not perfect	29
„ of folded wing [from carpus to point of longest quill]	$5\frac{1}{2}$
„ „ bill from forehead	$3\frac{3}{4}$
„ „ „ gape or rictus	$4\frac{1}{2}$
„ „ tarsus	$2\frac{1}{4}$
„ „ middle toe	$2\frac{5}{8}$
„ „ „ and nail	$3\frac{3}{8}$
„ „ inner toe	$2\frac{1}{1\,2}$
„ „ „ and nail	$2\frac{6}{8}$
„ „ outer toe	$2\frac{5}{8}$
„ „ „ and nail	$3\frac{1}{6}$
„ „ tail, which is broken, may have been about	2
Depth (greatest) of bill, exceeding	$1\frac{1}{2}$ "

This specimen is now in the University Museum, Dublin, having been liberally presented by Dr. Burkitt.

As afterwards ascertained by Mr. Davis, a second great auk was procured on the coast of Waterford, about the same time as the one already noticed; but, falling into ignorant hands, it was not preserved. The Rev. Joseph Stopford, in February 1844, communicated a note to Dr. Harvey of Cork, stating, but without any mention of date, that one of these birds had been "obtained on the long strand of Castle Freke (in the west of the county of Cork); having been water-soaked in a storm."

I have little doubt that two great auks were seen in Belfast Bay on the 23rd of September, 1845, by H. Bell, a wild-fowl shooter, whose good observation has already, more than once, been alluded to. He saw two large birds the size of great northern divers (which are well known to him), but with much smaller wings. He imagined they might be young birds of that species until he remarked that their heads and bills were "much more clumsy" than those of the *Colymbus*. They kept almost constantly diving, and went to an extraordinary distance each time with great rapidity.

The "*Alca impennis*, Penguin," stated in Sampson's 'Survey of Londonderry' to frequent the rocks of that county and of Donegal, we may fairly take for granted is the *Alca torda*, or razorbill, as this species has not a place in that author's catalogue of birds.

The great auk is of extreme rarity, not only in the seas around the British Islands, but in all those of Europe;—and it may be added, of America also, so far as positively known at the date of publication of Audubon's work. This author was, however, assured by fishermen that the species breeds in a low rocky island to the south-east of Newfoundland.

THE COMMON OR GREAT CORMORANT.*

Phalacrocorax carbo, Steph.
Pelecanus ,, Linn.
Carbo cormoranus, Temm.

Is of ordinary occurrence, and resident.

It may be seen every day about our coasts either on the water or conspicuously perched on any prominent object rising above its surface; buoys, &c., in our harbours being as favourite perching places as rocks. It may not unfrequently be observed flying over land, on the way to or from some fresh-water lake. I have met with it at such localities a few miles from the sea, where the latter would have afforded an abundant supply of food; as in the month of June, at Port-lough (near Dunfanaghy), some two or three miles inland—in July, at a small lake near Portaferry (Strangford Lough),—in the middle of June 1833, some appeared about Lough Neagh, in the vicinity of Ram's Island; and when visiting the lake on another occasion, I was told that a species of cormorant had bred on Scawdy rock—a low ridge—between Toome and Shanes Castle. This is very improbable, and may have been imagined from the circumstance of the birds being seen there during summer. M'Skimmin, in his 'History of Carrickfergus, remarks of cormorants:—"Those here set off, almost every morning, for Lough Neagh, and return again the same evening: on one being shot just as it arrived from Lough Neagh,

* "Skart" in Strangford Lough, &c. The 'crested corvorant' of Bewick is the adult bird in spring plumage.

in its crop were found fourteen pollans:" sufficient evidence, certainly, that this individual had been fishing there, for nowhere else nearer than Lough Erne could this species of fish have been obtained. A scientific friend visiting Massareene deer-park, on the borders of Lough Neagh, on the 3rd of December, 1847, was attracted by the singular appearance of about a hundred cormorants perched on trees (probably thirty feet in height) on a low wooded island of the lake, where they remained for two hours, or so long as he had an opportunity of observing them. The country-people there believe that these birds daily visit the sea, and that "they would die if they did not get a drink of salt water within the twenty-four hours"! In the beginning of July 1834 we saw cormorants about the lakes in the west, between Westport and Cong, and soon afterwards, about the lakes of Killarney. An old friend informs me, that previous to the last thirty-five years these birds were almost daily to be seen up the river Lagan, especially at high water, often perching on the overhanging trees at Annadale, where the flow of the tide terminates.

Breeding-haunts.—This species bred in numbers, annually, at the Gobbins, until of late years; about 1845 being the last occasion on which it was known to do so. It built there very early in the season. "Common cormorants formerly bred in considerable numbers at Down Hill, in the county of Londonderry, but since the recent blasting of the rocks for the formation of a railway, they have deserted that locality, and have resorted to some of the high rocky headlands adjacent to the Giant's Causeway, where they remain throughout the year. When fired at, they usually fly out to some distance at sea, but have been occasionally observed to plunge down almost perpendicularly from the rocks and evade the fowler by diving beyond his reach."* This cormorant is said to nidify in the caves on the north of the island of Rathlin.† It has more than once come under my own notice in its breeding-haunts, which were lofty tabular rocks sheltered by

* Mr. J. O'N. Higginson.

† Dr. J. D. Marshall. It breeds at the Mull of Oe, Islay, the nearest land north of Rathlin.—W. T.

still higher cliffs. The most favourable opportunity I have had of observing it is alluded to in a general description of the birds of Horn Head, under Puffin (p. 225). The gamekeeper there stated that he had seen salmon of from two to five pounds weight in their nests; but this must be over-estimated. They are considered so destructive to this valuable fish, that a reward of fourpence is paid to him for the head of every cormorant of this species he can procure. In a note to the Shag in M'Skimmin's 'Carrickfergus,' it is added:—"Rewards were formerly paid at assize for destroying these birds; in the records of the county Antrim, in 1729, mention is made of a person called Jemfrey, in Island Magee, who had killed ninety-six cormorants in one season." We cannot tell from this whether rewards were offered for only one, or for both species.

Lieut. Reynolds informed us, in 1834, that the cormorant which is "all black" breeds on the Bills Rock, off Achil.

At Arranmore, off Galway Bay, Mr. Ball and I, on the 8th of July, 1834, saw a colony of cormorants at their breeding-stations;—a tabular mass of limestone high above the sea, and from the summit of which a lofty range of precipice arose. The following day we saw twenty-two of them swimming together in a close flock, between the two smaller islands. Not one of the birds perched on the rock—(and they were admirably seen through a telescope)—exhibited the least white on the head or thigh, nor any crest; nor did those already noticed as seen about the same time in the vicinity of the fresh-water lakes. Further, with respect to plumage; one, which flew within twenty yards of me, at Port Lough, was wholly black, as were two which passed near to me at Horn Head; and not one, out of the many birds in their nesting-place there, exhibited the least white, or peculiar plumage of the 'crested corvorant' of Bewick, considered by authors as their breeding attire. It would thus seem that these birds throw off that plumage earlier here, or breed at a later period than they do in other localities, and at the same time make known the singular fact, that the cormorant does not, like most other birds, retain its full dress during the breeding season. I have not seen

this singular circumstance alluded to, though from observation made on a bird in the garden of the Zoological Society, London, respecting the period of the first appearance (January 4th), and total disappearance (May 12th), of the plumage under consideration, it might be inferred that unless the cormorant breed very early, such must be the case.* On the Farn Islands, however, Mr. Selby informs us he has had repeated opportunities of verifying that the garb is retained "till after reproduction has been effected;"—no dates are mentioned.†

So early as the 24th January, 1832, the Rev. T. Knox received a female bird in the full plumage of Bewick's 'crested corvorant,' with white on thighs, &c.; the eggs in this individual were very large. On the 21st and 22nd of February, 1849, several birds were seen in this attire at Larne Lough. A fowler informs me that he has commonly seen and shot cormorants in this plumage in Belfast Bay, from the middle to the end of March, soon after which time they leave it (on the 21st of April, 1847, he saw two birds there with white thigh-marks, &c.), and do not return until after the breeding season, when the white thigh-spot, or "watch, which they carry under the wing," is dropped, with all other gay adornments, and they appear in a full suit of sable.

This cormorant has many places of nidification on the coast of Kerry, as Muckalaw rock (Tralee Bay), Kerry and Brandon Heads,‡ Magharee Islands, entrance to Dingle Bay, on each side, smaller Skellig rock, &c.§ On the coast of the neighbouring county—Cork—"the shags and cormorants" are said to abound, and are believed to breed at Fyleneshogue, near Glandore harbour, and at Black Rock; at Cape Clear they have been observed on their nests.‖ Mr. R. Warren, jun., when visiting the rocky

* Full particulars of this change of plumage (made by James Hunt, keeper) will be found in Mr. Yarrell's paper 'On the Plumage of Birds' (Zool. Trans. vol. i. p. 18), and in his history of British species.

† The rock-climber at the Gobbins states that the cormorant bred there in March, which, if correct, would leave it sufficient time to bring its young to maturity before changing plumage.

‡ Mr. R. D. Fitzgerald, jun.

§ Mr. R. Chute.

‖ Mr. J. F. Townsend.

islets called Reannies, off Cork harbour, on the 27th of April, 1848, saw eggs, two to four in number, in about twenty nests of the cormorant, and several other nests were only completed. The pilfering of the eggs, during the absence of the owners, by a pair of ravens that had a nest in the same range of cliffs, will be found noticed in Vol. I. p. 306. All the cormorants here were in full nuptial plumage, displaying the white thigh-mark, light colour about the head, &c. This species nidifies in various small communities on the shelves of the rocky coast between the Reannies and the Sovereign Islands.

At the marine rocks of the adjoining county of Waterford, at Ardmore and other places, cormorants build;* and with reference most probably to the coast of Wexford, Mr. J. Poole has communicated the following note:—"May 15th; the cormorant has eggs, some nearly fresh, some, and much the larger portion, nearly hatched, and from a few nests the young are excluded. Some young birds are nearly grown. The nests are placed in the hollows and crevices of a solitary rock (a few yards from the main land), about seventy or eighty feet high, and are composed of seaweed, ferns, grass, and feathers; eggs three to five. The young birds exhibit very curious gestures when disturbed or expecting the old ones with food, opening their bills, and causing their cheek-pouches to quiver or undulate with a very rapid motion." At the island of Lambay, off the Dublin coast, cormorants annually nidify.† Marine rocks only have hitherto been mentioned as breeding-haunts. Upon an island in a fresh-water lake at Castlemartyr, county of Cork, the seat of the Earl of Shannon, the gamekeeper reckoned more than eighty nests of the cormorant on Scotch fir-trees not less than sixty feet in height, about the year 1833.‡

The spread wings of this bird, after the plumage has become saturated by long diving, have often been commented on by authors

* Mr. R. Ball. † Mr. R. J. Montgomery.

‡ Proceedings of Zoological Society of London, 1847, p. 97.

—among others, by Sir Wm. Jardine, in his 'British Birds.'* When at Strangford Lough, on the 21st of June, 1832, I saw fifteen cormorants (but of which species I was not near enough to determine), after a very heavy shower of rain, standing together in a line, apparently on the water, though in reality on a sunken rock, which did not rise to the surface, with their wings outstretched to dry; it would thus appear, as we might expect, that a wetting by rain prompts the expansion of the wings as well as that by sea-water. I have at other times, in the midst of the breeding season, seen many of these birds here.

Mr. Poole has contributed the following note:—"*Nov.* 5, 1847.—The cormorants frequenting Wexford Harbour seem almost universally to retire to the Saltee Islands, about fifteen miles distant, every evening, to spend the night. Still, I have reason to think, that a few remain perched on the posts set up for channel-marks through the harbour. A single bird has appropriated to his own private accommodation the outside post of the channel, leading from my limestone quarry, thus saving himself the trouble of a fifteen miles' excursion morning and evening. I conclude that it is entirely for want of a suitable roosting-place in the vicinity that they go so far for a night's lodging. This evening I was somewhat amused at the endeavours of a second bird to get a share of the fortunate perch on which my acquaintance had located himself. The cormorant is an awkward bird upon the wing, and this one was but little more active than others of his tribe. Time after time he ventured to the charge, but could get no admittance there for the sole of his broad foot. Then off would he fly to another perch at some distance; but finding insufficient footing upon it, after flapping his wings for a few minutes, in the vain attempt to settle, he would drop down into the water to rest himself. Till darkness came on the contest was maintained; but while my sight served me, the first and most fortunate occupant stoutly maintained his position, perhaps inwardly amusing himself at the fruitless manœuvres of his assailant,

* Vol. iv. p. 242.

who, after all, may have had to try his way to the Saltees through the black night.

"As my residence lies close to a narrow part of Wexford harbour, and between the principal part of its area and their roosting-place, I think I may conclude that nearly all the birds of this species which make out their livelihood there, pass within sight of my door. If this supposition be correct the number is not great, for not more than from twenty to forty birds pass by daily. So bad a flier is the cormorant, that when the wind is high, as this evening, he can scarcely make any way whatever against it. A great number of gulls of different species follow the same track as the cormorant, the black-headed (*Larus ridibundus*) being very common." It was mentioned three days after the preceding note that—"The cormorants met such opposition from a strong southern gale, that finding themselves totally unable to make head against it they betook themselves to the water, and, having the tide in their favour, pursued their journey successfully among the waves."

Cormorants are frequently observed perched on stones round Swan Island, Larne Lough, their daily fishing station at high water, and one morning at day-break, in February 1847, a correspondent of accurate observation saw about a dozen of these birds perching there, where he had no doubt they spent the night. It was high water at the time. On the lower portion of a ruined building, called the Block-house, situated on a little islet at the entrance of Carlingford Lough, they are stated to remain during the night, particularly in stormy weather.

Cormorants regularly appear in flocks far up Belfast Bay after the breeding season, and their arrival is welcomed as a proof that there are plenty of fish; early in September 1839, fifteen were seen together near Conswater, and a flock of similar number appeared on wing, coming from the direction of Strangford Lough. Some were seen on the 17th of August, 1840; and on the 23rd of that month, in 1844, a flock of sixteen came up the bay on wing, as usual at this season, when young fish, such as codlins, blockans (*Gadidæ*), &c., are abundant: the birds appear

sooner or later, according to the presence of the fish. On the latter day a flock of above a hundred cormorants was observed to to bear down upon the estuary from the direction of Strangford Lough, and were, at first sight, owing to the great number, mistaken for wild geese : they soon broke up into divisions, of which that already noticed was one, and betook themselves to different parts of the bay. So early as the 3rd of August, 1850, I observed a flock of seventeen fly over the point of the Kinnegar, and near to the town; but within an hour they returned again. On looking to the food in two birds killed here, I found in one the remains of fish and a perfect specimen of the crustacean *Pandalus annulicornis* (shrimp-like in size); the other contained an eel about fifteen inches in length, and, with the usual perversity of the species, having its head turned towards the throat of the bird. The weight of one of these cormorants, a male, was 7 lbs. 6 oz. (avoirdupois).

An accurate observer, who, from living on the shore of Belfast Bay, and shooting a great deal, had ample opportunities of studying the habits of the cormorant, states, in opposition to writers generally on the subject, that he has never seen it throw a fish, awkwardly caught for being swallowed, into the air, or clear of the bill, that it might be seized in a favourable position for that purpose, but, to use his own words, "the fish is instead shifted in the bird's bill and different snatches are made at it until it comes right, just in the manner that a dog acts under such circumstances." Nor has he ever seen it fly to the land with any object; nor swim with its head under water when looking out for food;—"it affords the fowler no such chance of a shot." He considers it to keep quite under water when fishing, and to dive in search of prey, before unseen. His reason for this opinion, is, that the bird comes up frequently without prey, which he believes is always brought to the surface to be eaten, from the circumstance that very small fish are sometimes in its bill when the bird re-appears after diving. Large fish he has often seen it shake, as a dog does a rat, to render them manageable; he has observed it to eat more small flounders (*Platessa flesus*) than any other fish (owing

to the locality, I should imagine, and not to preference); but the species were various. The lateral distension at the base of the bill enables this bird to swallow fish of such breadth as is surprising to persons who have never examined the structure adapted to that purpose. If approached suddenly when in possession of a fish too large to be swallowed on the instant, the bird dives with it, and has never been observed by him, when thus alarmed, to fly off with prey in its bill;—it has no young to supply with food from this locality. As to watching fish from a post (as has been stated), he considers it never to do so, but to alight there for rest or drying the plumage, which is effected by fanning the wings. He believes it to look for food only when beneath the surface of the water. A good telescope was in frequent requisition during these observations, in all of which the most experienced fowlers in the bay agree.

Cormorants, and all birds that prey on fish, endeavour—but often in vain with the eel—to swallow them head-foremost. Probably a natural instinct prompts them to do so, as the spines in the fins, &c., then lie the "right way," and the gastric juice acts first on the most bulky part (the head).

In the year 1833, Mr. Glennon, of Dublin, showed me two of these birds in the plumage of Bewick's 'crested corvorant,' in which were found many eggs. He published the following account in the first volume of the 'Dublin Penny Journal' (1832–33). "Several years ago, I took a pair of these birds from a nest among the rocks of Howth, and kept them for nearly two years, by which time they had attained their full growth [and the plumage of Bewick's 'crested corvorant']. They were pleasant pets enough, unless when pressed by hunger, but then they became most outrageous, and screamed most violently; when satisfied with food, they slept, roosting on a large stone trough placed for holding water. But woe to the man or beast that attempted to approach them when hungry. It happened once that a gentleman's servant went to look at them while in this state: he wore a pair of red plush breeches, that immediately caught the attention of the birds, which I had been in the

habit of feeding with livers and lights; the consequence was, they made such a furious charge that I had to run to his assistance with a stick, and even so did not beat them off without difficulty. Their attack on dogs, cats, and poultry, if unprotected, was always fatal. They fought at once with their bills, wings, and claws, screaming frightfully all the time. In fact, the cause of my parting with them was their having destroyed a fine Spanish pointer: he had incautiously strayed into the place where I kept them, and they immediately flew at and attacked him in front and rear; his loud howlings brought me to his aid. I was astonished to find they had got him down; and, before I could rescue him from their fury, they had greatly injured him in one of his shoulders, so much so, that he afterwards died of the wound" (p. 334).*

Mr. Ball states (Oct. 3, 1845) that — "In the Zoological Garden, Phœnix Park, Dublin, a cormorant has been for about two years in confinement. He is a fierce bold bird in spring, and may often be seen on the lawn with a large stick in his mouth, evidently with a nest-making intent. His eye then is of a beautiful green, very different from its dusky colour in winter. This cormorant catches a considerable number of fish in the pond. Sometimes, when he gets a large eel, the struggle to keep it down when swallowed, seems to be one of great exertion. He has sometimes killed very large tench and carp, much too large for him to swallow. When approached, he throws back his head almost on his tail, which is spread, and makes a very curious croaking noise. On one occasion a heron came near him, when he seized the bird by the neck, and, though assistance was near, killed it in a few moments. He has latterly been imprisoned for making similar attempts on geese."

These Irish cormorants were very far from exhibiting the same amiable and unblemished character as the individuals noticed by Montagu and Selby, as having been in their possession. A long and interesting account of the one kept by the former author

* This has been copied in Stanley's 'Familiar History of Birds.'

will be found in the Supplement to his 'Ornithological Dictionary.' The virtues of the common and green cormorants as food, are not much enhanced by a note from the late Mr. G. Matthews; that "they were both eaten by the Norwegian sailors;—when they had nothing else"! Audubon (vol. iii. p. 458) furnishes good information on the breeding-haunts, young, &c., of the cormorant, as observed in North America.

THE GREEN CORMORANT.

Shag; Crested Shag or Cormorant.

Phalacrocorax graculus, Linn. (sp.)
Pelecanus „ „
Carbo cristatus, Fabr. (sp.), Temm.

Is resident, inhabiting all quarters of the coast, but generally less numerous than the common species.

Montagu remarks, in his 'Ornithological Dictionary,' that this bird never visits fresh water; and in the Supplement of that work records one instance of its doing so. Mr. Selby, too, mentions it as "never frequenting fresh-water lakes or rivers" (p. 452). The idea that this species is strictly marine, and differs from the great cormorant in this respect, is very general. In M'Skimmin's 'History of Carrickfergus,' where the latter is said to visit Lough Neagh daily, the other is stated never to leave "the salt water;" and at Horn Head, a reward is offered for the destruction of the one, owing to a belief that it feeds on young salmon, while the other is considered innocent of all evil;—*i. e.*, to man. This is borne out chiefly by the gamekeeper, in so far that in its nest he finds only sea-fish; chiefly herring fry and sand-eels.

I have been favoured by the Earl of Enniskillen with two specimens of the green cormorant, taken far inland on different occasions. One of them, in the month of January 1839 (?), and I think soon after the great hurricane, was captured alive, near

Swanlinbar, in the county of Cavan, under Ben Eachlin, and nearly thirty English miles from the sea. The lad who caught the specimen stated that it was accompanied by four more birds of the same kind. It was quite strong, and fed well on fish. On the 16th of September that year, the other individual, an immature female, obtained near Florence Court, about twenty miles inland, was sent to me. I have very lately learned from the Rev. G. Robinson, who resides near Lough Neagh, that the green cormorant habitually frequents that great sheet of water, where he has not, however, seen more than two in company, or more than that number in one day;—they were generally sunning themselves on some of the islands when observed.

M'Skimmin, in 1823, mentions this bird, as well as the common cormorant, breeding at the Gobbins, but both are believed to have relinquished the locality for that purpose. I have known the species under consideration to be killed there during the breeding season; and at other times in the neighbouring marine lough of Larne.

Much the best account we have of this bird in any breeding-haunt on the coast of Ireland, is from Dr. J. D. Marshall, who informs us, in his published memoir, that about the 1st of July, 1834—"We found this corvorant (*P. cristatus*) in pairs, frequenting the numerous caves with which the northern and western shores of Rathlin are indented. They formed their nests on the high ledges of rock, almost touching the summit of the caves; the nest was composed of fuci of various kinds, matted and plastered together; the eggs were of a bluish-green colour. We sometimes, by good management, entered the caves ere the corvorants had left, and at such times we found them sitting, with the neck and head thrust over the ledge of the rock, looking down on the boat as it made its way to the inner extremity of the cave. On firing our guns, they would drop into the water as if they had been shot, and, with great expertness, dive under the boat, and make their way out to sea. This species seemed much more numerous than the common cormorant (*P. carbo*)."

The gamekeeper at Horn Head stated in 1832, that the green

cormorant builds in the clefts of rocks out of sight, lays in May, and that about three hundred, perhaps, breed there. Two gentlemen, then resident in Dunfanaghy, the nearest village, assured me that they had, in the preceding week, from a boat, killed both species of cormorant on their nests within caves.

At the Hards Islands, off the Galway coast, one of these birds was shot on the 1st of August, 1844, and they were remarked to be numerous there.* In the island of Arranmore, numbers build, and the eggs, with those of the common species, were brought from the rocks, at the beginning of June 1835, to Mr. R. Ball, who killed there, without seeing it, a fine adult male. Having fired at a glaucous gull without observing any other bird, he found "five herring-gulls had fallen near it, and on landing and walking up the beach, the cormorant was found with a shot through his brain, just dying." On the coast of Kerry this species is said, like the common cormorant, to breed on all the precipitous headlands, Kerry and Brandon Heads, Muckalaw Rock, &c.;† both species nidify at the cliff called Esk, and at both sides the entrance into Dingle harbour; the smaller having its nests about one-third the height of the cliff from the water, and the larger about the same distance from the top:‡—the small Skellig rock and Magharee islands are likewise the breeding-haunts of *P. graculus*, which is considered by Mr. R. Chute to be more numerous in all localities on the coast of Kerry, than *P. carbo*. "Between the Reannies and the Sovereign Islands, on the coast of Cork, the green cormorants are not numerous, and appear less so than they really are, on account of breeding in single pairs, far apart from each other, on snug little shelves and ledges, on the same part of the coast as the common species. One or two pair breed on the Sovereign Islands. Both cormorants appear to construct their nests of dried sea-weed and grass."§ Great numbers nidify in the cliffs at Ardmore, county Waterford;‖ in those of the county Wexford they also build, but are considered, on the coast of the latter gene-

* Rev. G. Robinson. † Mr. R. D. Fitzgerald, jun.
‡ Hon. Mr. Moleyns. § Mr. R. Warren, jun. ‖ Mr. Ball.

rally, to be about five to a hundred of the other (*P. carbo*).* At the island of Lambay (Dublin coast) they annually breed;† about fifty birds were observed there one day in June 1850. ‡

I have seen specimens which were killed in Dublin Bay, and was informed, in 1837, that about the month of November or December, every year, six or seven of these birds appear near the Pigeon-house battery there.§ They are rarely met with far up Belfast Bay, like the common cormorant; in the tidal portion of the river Lagan, at Ormeau, one was shot in April 1827.

On the sands of the river Bann, about a quarter of a mile from where it joins the ocean, I remarked the following incongruous flock of birds on the 9th of July, 1833;—seven green cormorants, two herons, several curlews, five black-headed, several of the greater black-backed, and a very large flock of herring-gulls; these last being in one, two, three, and four years old plumage.

In the stomach of a green cormorant, shot in January 1838, containing as food the remains of fishes only, I found three pebbles,—one, an inch and a quarter, another an inch, and the third three-quarters of an inch in breadth, but none more than half as much in thickness.

Sir William Jardine gives a very interesting description of this species in its breeding-stations, several of which he visited.‖

Carbo pygmæus, Temm.—A cormorant of a blackish-green colour, smaller than *C. cristatus*, and I have no doubt *C. pygmæus*, flew close past H.M.S. *Beacon*, when in the harbour of Syra, on May 7th, 1841; a fact worth noticing, as neither Temminck nor Degland¶ is aware of its inhabiting that quarter. On the 10th of June I saw, at a rocky islet to the north-east of Port Naussa, in the island of Paros** another small cormorant in a different state of plumage—(back greyish-green, belly white)—which I considered to be of this species.

* Mr. Poole. † Mr. R. J. Montgomery. ‡ Mr. Watters.

§ Mr. H. H. Dombrain. ‖ 'Brit. Birds,' vol. iv. p. 240.

¶ 'Ornithologie Européenne.' 1849.

** Pelican (*P. onocrotalus*). Mr. Wilkinson, jun., of Syra, described to me as a

THE GANNET.

Solan Goose.

Sula Bassana, Briss.
Pelecanus Bassanus, Linn.
Anser „ Ray.
Sula alba, Meyer and Wolf.

May be seen on most parts of the coast in summer and autumn :—it breeds on one of the Skellig islands.

Considering that there is only this one breeding-haunt on the coast, it is singular that gannets should even in summer be spread as they are around the entire island;—as personal observation and communications from the north, east, south, and west attest them to be. Herrings are generally considered to be their chief attraction, and when they are "on the coast" the birds are believed to be most numerous. When anywhere about the northern coast of Down, and along that of Antrim, at the more genial season of the year, the gannet has almost daily come under my observation; and several were always in sight from the boat as we proceeded from Donaghadee to the Copeland Islands. On June the 13th, 1832, it was noted that from five till six o'clock in the morning we saw many gannets on wing when on our way to the Mew Island, one of the three bearing the former name:—several alighted one after the other on the water until they formed a small flock, when they continued swimming together. They all descended in a very oblique line (about seventy-five degrees), and not perpendicularly, as they usually do when fishing. Although

beautiful sight, a flock consisting of from two to three hundred of these birds, which he saw about the 10th of September, 1840, flying southward in the vicinity of Smyrna: the form of the flock varied much, being sometimes crescentic, at others a straight line, &c.

In the Surrey Zoological Garden I once (April 1834) remarked five of these birds engaged for some time going partially under water in concert, after the manner of tame swans.

flying lower than when observed here before (June 11, 1827), none from the comparatively less height dashed down to seize its prey as they then did from twice the elevation : the water this morning was only tolerably smooth ; on that occasion it was calm as a mirror. *June* 24, 1833.—Same locality and time of morning ; gannets flew past us in one direction, until seven collected together ; they then kept flying in company, though not in a regular flock, about the same place for some time, not one descending for prey ; a few others were seen on wing and on the water, but not fishing. When passing the Copeland Islands, on the 17th of May, 1849, at seven o'clock in the evening, several gannets appeared, which I should expect took a flight before roosting-time to the Craig of Ailsa. Proceeding to and from the Mew Island (from Groomsport), and when there, on the 16th of July, 1850, we saw about twenty gannets on wing, singly, or not more than two in company. Not one of those observed in the course of several hours was fishing ; the sea was rather rough. All seen on this and former occasions here were adult, excepting one to-day, which was in the next stage to maturity, being partially white ; it was in company with an adult bird. When landing on the island we saw an old gannet in the possession of two boys, who had caught it on the water. It was still living, not having suffered from the capture, but was very much emaciated in the body, though no external wounds were visible. As usual with birds in poor condition, it was very much infested with parasitic insects. Adult birds, as well as others, apparently in perfect health, and taken on the water by fishermen—who imagined them to be overgorged—have frequently come under my notice.

Within the entrance of Belfast Bay they are commonly to be seen throughout summer and autumn, but very rarely do the adult birds come far up the estuary. Within three miles of the town, two appeared on the 14th of May, 1832, one of which was struck down with an oar and secured. On the 27th of April, 1850, a fine old male was taken off Holywood, by becoming so entangled in a fisherman's float-lines that it was drawn into his boat, and quite uninjured. Young birds have not unfre-

quently been shot near the quays of the town in severe winter weather.*

Two sporting friends, when crossing from Portpatrick to Donaghadee, at the end of November 1844, remarked groups of two or three old gannets fishing together as in summer.

Both adult and young birds are sometimes seen and captured inland. A friend observed one in full plumage in the spring of 1835, about a mile from Belfast and a similar distance from the sea, flying directly inland; about the middle of October 1837, a young bird of the year was captured in a brick-field on the western side of the town: this bird was purchased by a friend, with whom it lived for a considerable time, as I have known them do in many instances. The following notes inform us of the occasional appearance of the species considerably inland. A young bird of the year was taken asleep at seven o'clock in the morning of the 18th of October, 1838, under a stook of corn, at New Ferry, near Portglenone, and within forty or fifty perches of the river Bann. It was brought to Belfast alive for sale, under the impression of being an extraordinary rarity, no bird of the kind having ever before been seen in that part of the country. Such was the information derived from its captors by Mr. R. Patterson. The locality is above thirty English miles from the sea. On the 30th of August, 1841, an adult female was taken alive by the gamekeeper, after some resistance, in a wood at Gurteen, about four miles from Clonmel, and far distant from any water, either fresh or salt. It lived for a few days, but was much emaciated, and weighed only 3 lbs. 13 oz.† About the month of February 1844, an immature bird was taken near Clonmel.‡

With respect to plumage, which the gannet is considered not to attain in a perfect state until the fourth year (Selby), it is

* At the end of November 1849, a young bird of the year, which came under my notice in Dublin, was shot on the coast there.

† Mr. R. Davis, jun., and 'Tipperary Free Press,' September 11, 1841. Audubon, weighing several adult gannets, found them to average above 7 lbs.

‡ Ibid.

singular that the adults and young birds of the year are not only the most frequently met with around the coast of Ireland, but that they alone have come under the notice of some ornithologists. The intermediate states, and more especially the one preceding maturity, are rarely noticed. It has been remarked as strange that the old birds should be so much more frequently seen than the young; but as only one young is produced, two of the former may during summer and autumn be expected to be seen for one of the latter. The young have a singular and handsome appearance: the pure white spots, disposed over the blackish-grey plumage, appear just as if a snow-shower had fallen on the bird; a remark which equally applies to the speckled divers (*Colymbi*).

A gannet, in the plumage of the second year, captured by a fisherman near Carrickfergus, in the month of September 1831, was brought alive to a bird-preserver in Belfast. This poor bird had a most unfortunate malformation of bill for its mode of fishing, the two mandibles crossing each other quite as much as those of the common crossbill (*Loxia curvirostra*). I did not see the bird alive, but the taxidermist informed me that the body under the wings was so warm that his hands could hardly bear the heat, and that the bird was continually endeavouring to free itself from the host of parasitic insects with which it was infested. Their extraordinary number no doubt arose from the inability of the bird to free itself, even partially, from its tormentors with an instrument so ill adapted to the purpose.

An ornithological friend once remarked, much to his surprise, the singular place selected by a young gannet in captivity for stowing away the portions of its meal left after its appetite had been satisfied. These, consisting of entrails, the bird tucked in beneath and suspended over each wing, until hunger should again be felt.

Fishing.—To witness the fishing of the gannet is not only a beautiful, but a grand spectacle, more so to my mind than even the swoop of the golden eagle or the peregrine falcon at its "quarry," in which amazing power of flight and keenness of vision are manifested. These chase their prey in their own

element, the ambient air, and if the pursued touch but the surface of the water, it proves an altar of safety against the assailant; but the gannet procures its food not only in another element, but, from a great elevation in the air perceives it far beneath the surface of the sea, majestically poises itself, and, direct as a plummet, shoots into the deep with an impetus that forces a jet of water into the air, and leaves behind a circle of snowy foam conspicuous from a great distance. The more intelligent fishermen of Belfast Bay always like to see the gannet when they are herring-fishing, as they set their nets according to the height above the water from which it plunges; the greater the elevation of the bird in the air, the lower in the water the nets are sunk. The extreme depth of water in which the gannet can see its prey from on high must be somewhat conjectural; but that numbers of these birds have been taken in nets at a depth of 180 feet is fully proven. On this subject I contributed the following notes to 'Charlesworth's Magazine of Natural History,' in January 1838 (vol. ii. p. 19) :—

Having heard from two friends, who were grouse-shooting in the neighbourhood of Ballantrae, that they had seen great numbers of gannets lying in a state of decay, in holes on the beach, and that these birds had been taken at extraordinary depths in the fishermen's nets, I made particular inquiry on the subject from a worthy resident of my acquaintance (postmaster, &c., of the village), and on the 15th of November, 1836, received the following reply :—" Gannets are very commonly caught about Ballantrae (chiefly in the month of March) in the fishermen's nets, which are generally sunk from nine to twenty, but sometimes to the depth of thirty fathoms,* just as the fish, herrings, &c., are lying. They are taken at all these depths, when the water is rough as well as smooth, and in both the cod and turbot nets (respectively five and seven inches wide in the mesh). Of the greatest quantity taken at one time, 'John, son of old Alex. Coulter, can make oath, that he took ninety-four gannets from one net, at a single haul, a few years ago. The net was about sixty fathoms long, a cod-net, wrought in a five-inch scale. The birds brought up the net, with its

* One hundred and eighty feet; there being six feet in a fathom.

sinkers and fish, to the top, where such as were not drowned, made a sad struggle to escape. There were four nets in this train; but the above ninety-four were in one of the nets, and there were thirty-four additional birds in the other part of the train, being one hundred and twenty-eight gannets in all." It is added, that "there are found also in the nets, what are here called holland hawks,* and burrians;†—a holland hawk weighs 14 lbs.—the bird called burrian weighs 7 or 8 lbs., and is speckled on the back like a starling, belly and breast pure white. Some others of the Ailsa birds are also got in the nets at all depths;—one is about the size of a pigeon,‡ moves in the water with extended wings, always pushing his way forward, and thus gets drowned. Herrings are occasionally taken in the wide cod-net, and also mackerel." Were these facts not amply attested, I would be incredulous about the depths which the gannet sounds; but the information furnished in writing, the truth of which, it is stated, may be implicitly relied on, is precisely what was related to my friends, and the singularity of which prompted my inquiry. The vicinity of Ailsa Craig, the great breeding-haunt of the gannet in this quarter, must be recollected, in connection with what is here related.

They have repeatedly been captured since in the same manner. At the end of March 1840, an eye-witness mentioned to me that he saw a number of gannets taken from the herring-nets there. On the subject of the gannet's fishing, the following notes have been contributed. Some of these birds came daily under the observation of a scientific friend, who spent some time late in the summer of 1833 at Cushendall, on the coast of Antrim. He remarked that when in pursuit of prey they invariably went down perpendicularly, remained a long time under water, and never reappeared without a fish crosswise in their bills, which was thrown up into the air, caught by the head in its descent, and swallowed. This done, they flew away close above the surface of the water to

* Great Northern Diver. *Colymbus glacialis*, Linn. "Allan-hawk" is applied to divers (*Colymbi*) generally, in Belfast Bay.

† Red-throated Diver. *Colymbus septentrionalis*, Linn.

‡ Puffin (*Mormon fratercula*, Temm.), probably, judging from the size. The description of the manner of moving under water, would, perhaps, apply generally to diving birds.

a distance of two or three hundred yards, alighted, and remained there for one or two minutes preening themselves, and again returned to the fishing-ground. My informant supposes this rest to be necessary after the exhaustion caused by their descent. He has observed them when apparently about to poise themselves previous to making the plunge, fly away obliquely (though not alight), as if they saw they had no chance of securing their intended prey; but, once the plunge was made, the object never escaped. They not only remained a long time under water, but emerged at a considerable distance from where they disappeared.*

The Rev. G. M. Black, writing from Annalong, at the sea-base of the mountains of Mourne, in October, 1849, observes:—"Gannets are frequent on the coast, and I spend often some half-hours in watching them fishing. Their power of sight must be amazing, as, no matter how rough the sea may be, it seems to make no difference to them. The fishermen say they know on what kind of fish they are 'working' by the manner in which they 'strike;' if on herring or grey gurnard, slow-swimming fish, as I believe, they ascend perpendicularly, or nearly so, but if on mackerel, obliquely. One which happened to be caught asleep on the water (which is often the case) during the mackerel season, was brought on board the boat and tied by the leg to one of the 'thafts.' To test its appetite some fish were thrown to it, when, without 'drawing breath,' it swallowed four full-grown mackerel, and probably would have disposed of more, had not the fishermen thought it had had enough, at least for one meal. They must breed very early, as I have observed, in the end of May, young birds quite strong on the wing, and fishing with the old ones. In winter I occasionally see the old birds, and them only."

Having requested my correspondent to note the dates of these birds being seen, he reported the last one in 1849, to have appeared on the 15th of November, and the first one in the spring

* Audubon, having shot a gannet just as it emerged with a fish in its bill, and having found two others half-way down its throat, remarks,—"This has induced me to believe that it sometimes follows its prey in the water, and seizes several fishes in succession" (vol. iv. p. 227). This author gives an excellent account of the gannet.

on the 10th of March; during the winter months of the season 1849–50, not one was observed. The oblique mode of descent when fishing, is little known, but it is unquestionably sometimes practised. A fisherman under whose notice gannets almost daily come in the season within the entrance of Belfast Bay, is of opinion (and doubtless correctly so) that they descend obliquely when their prey is in shallow water;—as in fishing for sand-eels at the depth of a few feet, and for herring fry at or near the surface. In very deep water likewise, they occasionally strike obliquely.

Gannets have been taken about Horn Head in the old-fashioned manner, by a fish fastened to a strong piece of board which is floated, and the bird coming down from a height in the air on the prey, has its neck dislocated. A fine adult bird was found upon the shore there with its neck thus broken a day or two before our visit at the end of June 1832. It is remarked by Mr. John Macgillivray that—"The force with which the gannet plunges from on wing in pursuit of a fish is astonishingly great. The following story, illustrating this point, was related to me by more than one person, both in St. Kilda and Harris, and I believe to be true. Several years ago, an open boat was returning from St. Kilda to Harris, and a few herrings happened to be lying in the bottom, close to the edge of the ballast. A gannet passing overhead, stopping for a moment, suddenly darted down upon the fish, and passed through the bottom of the boat as far as the middle of the body, which, being retained in that position by one of the crew, effectually stopped the leak, until they had reached their destination."* Whether or not we give credence to this story, the following will not, I fear, pass current. O'Flaherty, in his 'West or H-Iar Connaught,' written in 1684, informs us that —"Here the ganet soares high into the sky to espy his prey in the sea under him, at which he casts himself headlong into the sea, and swallows up whole herrings in a morsell. This bird flys through the ship's sailes, piercing them with his beak" (p. 12).†

* Description of the Island of St. Kilda, 'Edin. Phil. Journ.' January 1842, p. 66

† Published by the Irish Archæological Society, in 1846.

Breeding-haunts.—The adult gannets seen about the coasts of Antrim and Down in summer—and at five o'clock in the morning, as already stated, I have observed them about the Copeland Islands—are probably daily wanderers from their nearest breeding-haunts, or, indeed, their only near one, the Craig of Ailsa, from which the birds about Horn Head, in Donegal, also, probably come, as St. Kilda, their next nearest and only other breeding-haunt on the western coast of Scotland, is still more distant. It has been remarked of Ailsa—"The broken summits of the columns [of basalt, huge fragments of which encumber the beach below] serve to give a variety that increases the general picturesque effect. These are the habitations and nests of the gannets, innumerable flocks of which annually breed here; forming, with the various tribes of gulls, puffins, auks, and other sea-fowl, a feathered population scarcely exceeded by that of St. Kilda or the Flannan Isles. As the alarm occasioned by the arrival of a boat spreads itself, the whole of this noisy multitude takes wing, forming a cloud in the atmosphere which bears a striking resemblance to a fall of snow, or to the scattering of autumnal leaves in a storm. To prevent interference in their courses, each cloud of birds occupies a distinct stratum in the air, circulating in one direction, and in a perpetual wheeling flight."*

Although I have not visited Ailsa, its noble pyramidal form, rising to the altitude of 1,100 feet above the sea,† has always been familiar to me, forming, as it does, so fine a feature in the scenery when viewed from the north-east coast of Ireland. But while shooting on moors in Ayrshire, I have had the pleasure of making a nearer acquaintance with it, as thence casting the eye seaward, it was always the grandest object within view. On one occasion it was observed from the inland mountains that intensely dark clouds occupied the entire west and north-west, and most dismally grim did Ailsa rise from the dark waters; again, that it appeared covered with snow towards the summit, so exquisitely white were the clouds resting there;—and several times during two succes-

* M'Culloch's 'Western Isles,' vol. ii. p. 493. † Ibid.

sive days, a dark cloud was seen rising from its apex, like smoke from a volcano, which the configuration of the island so strongly resembles.

When in the vicinity in September 1843, I was told that the gentleman who had "the shooting" over the property about Ballantrae that season, went to Ailsa and cruelly slaughtered, in one forenoon with two guns, upwards of a hundred gannets, nearly all old birds. He first killed one at about a hundred yards from the island, and let it lie on the water to attract others to the spot, which it unfortunately did, until the number mentioned was killed. Bad as the destruction of gannets narrated by Audubon (vol. iv. p. 224) is, this is still worse, the American slayers having an object in it, though making a very trivial use of the birds. They killed them for the sake of the flesh of the breast, as bait for cod-fish.

Off the north of Scotland, the gannet is said to breed on the island of Souliskerry, as it is well known to do off the east coast, at the Bass Rock, Frith of Forth. Its only breeding-place* on the English coast is Lundy Island, in the Bristol Channel, and but a single locality on the coast of Ireland is thus honoured: this is one of the Skellig islands on the coast of Kerry. Smith, in his history of that county, written a century ago, when describing the "second or middle Skellig" island, observes—"'Tis remarkable that the gannet nestles nowhere else on the south coast of Ireland, and though multitudes of them are daily seen on all parts of our coast upon the wing, and in the sea, yet they were never known to alight on any other land or rock hereabouts, except on this island." It is added, "I have been informed that there is another rock on the north coast of Ireland where they alight and breed in the same manner, and nowhere else in the kingdom." I am unable to conjecture what rock is

* Mr. Macgillivray adds "Ronay" to the preceding Scottish localities, but simply names the island ('Manual Brit. Birds,' vol. ii. p. 225). Gannets are not mentioned in any description of North, East, or West Rona that I have read, as frequenting any of those islands. M'Culloch, describing Sulisker or Barra and North Rona in the same chapter, mentions these birds at the former island only ('Western Isles,' &c., vol. i. p. 205).

meant. In 1849, it was stated that—"At the larger Skellig island they used to abound, but since the erection of a lighthouse upon it, they have been confined to the small rock, where they still breed in considerable numbers."*

A letter from J. F. Townsend, Esq., dated Castle Townsend, September 22nd, 1850, informs me that the number of gannets breeding on the Lesser Skellig may be about 500 pair, in which enumeration Mr. Carter, Commander of H.M. Revenue Cruizer *Badger*, and Mr. Bates, the next officer in command, who have been much about the rock, agree with him. Some people at Valentia state, that they pay the proprietor of the Skellig for the privilege of killing gannets, &c. They sell the young birds for food. My correspondent has never known sea-birds' eggs used as food, nor heard, save in the instance of the young gannets, of the flesh of sea-fowl being eaten in the south-west of Ireland. Puffins are killed at the Skellig for the sake of their feathers.† From this station the birds probably wander northward, to Roundstone, on the Galway coast, in summer and autumn, where they are commonly seen, especially during the herring fishery.‡ But as adult birds appear on all parts of the coast in the height of the breeding season, when it may be presumed they "sleep at home,"§ they doubtless are spread round our coasts from Lundy Island, Ailsa, Skellig island, and occasionally, perhaps, from St.

* Mr. R. Chute.

† I had heard nothing of any other breeding-haunt of the gannet, than the Skellig, until the Stags of Broadhaven were incidentally mentioned in a letter from Mr. Townsend, in September 1850. On the 29th of the month, that gentleman favoured me with the following information on the subject. On his visiting that part of the coast of Mayo in a yacht in July 1836, hundreds of young gannets appeared near the vessel, and vast numbers of old and young were about the rocks. In a sketch then made of the locality, this species was introduced as a characteristic bird. Mr. Townsend remarks:—"There cannot be the least doubt that the gannet breeds at Broadhaven. In every sense they seemed quite 'at home' there. The Stags are huge insulated rocks, apparently as high as the Lesser Skellig, towering over the ocean at a considerable distance from the shore;—steep, craggy, and uninhabited. It was a sort of relief when we sailed away from their awful sides and gloomy shadows."

‡ The late Mr. J. Nimmo.

§ Mr. Knox, however, remarks that—"During the night they sleep on the water so profoundly as frequently to allow the boats to pass over them."—'Birds of Sussex,' p. 243.

Kilda. On the subject of the flights from such localities we have the following information :—"These islands are the favourite resort of gannets. No disturbances ever appear sufficient to induce these, more than the other species of sea-fowl, to change their haunts, nor do they court uninhabited places in particular. In leaving St. Kilda in an evening, they are met flying home in long flocks, separated widely from each other, and apparently each under a separate leader. At seventy miles from the island they were all found directing their course to it. It is imagined by the seamen and fishermen of this coast, that they fly out in the morning to feed, even to the southern parts of Britain, and return in the evening; a circumstance not improbable, when the strength and rapidity of their flight is considered."* That they fly so far —though having the power to do so—is, I conceive, very improbable. From a more recent visitor to the island, we learn that— "The gannet (*Sula alba*) is to be seen in vast numbers about St. Kilda, from whence a portion of them take their departure every morning to fish in the bays and channels of the outer Hebrides, the nearest of which is about fifty miles distant. I have even seen them in Dunvegan Lough, in the Isle of Skye, about ninety miles from St. Kilda, to which I have no doubt they all retire at night. In fact, long strings of gannets may be seen on the approach of evening, winging their way to the westward" (p. 64). * * * "The account given by Martin of the barren gannets, which roost separately from the others, was confirmed by the natives."†

Sir William Jardine gives, from personal observation, a very interesting account of the gannets at the Bass Rock,‡ where they appear to be as tame as Audubon describes them on the American coast, or, indeed, hardly less so than voyagers report birds to be on the first visit to uninhabited islands.

* M'Culloch's 'Western Islands of Scotland,' vol. ii. p. 54.

† "Account of the Island of St. Kilda," &c.; by John Macgillivray. Edin. Phil. Journ., No. 63, January, 1842, p. 66.

‡ 'British Birds,' vol. iv. p. 245.

RUPPELL'S TERN.*

Sterna velox, Ruppell.

Has been once obtained.

In the 'Annals of Nat. Hist.' for September 1847 (vol. xx. p. 170), I published the following notice of this species:—"In March last I had the opportunity of examining, in Mr. R. Ball's possession in Dublin, a specimen of a tern, the species of which I did not know. It was left by a young taxidermist at my friend's house early in the month of January, and apparently had been but recently skinned. Mr. Watters, jun., to whom the specimen now belongs, assured me, that he saw it in a fresh state, and that it was killed near Sutton—a place on the road between Dublin and Howth—at the end of December 1846; two others of the same species were stated by the shooter to have been in company with it. As the bird was unknown to me, I noted down the following particulars of it, which are given here that others may have an opportunity of forming their judgment upon the species:—

	in.	lin.
Length, total (stuffed), to the end of longest tail-feathers	20	3
,, of bill above from forehead to point	2	6
,, ,, from rictus to point	3	4
,, of wing from carpus	13	9
,, of tarsus about	1	0
,, of middle toe to base of nail	0	11
,, of nail itself measured in a straight line about	0	4

Wing and longest tail-feathers about of equal length; outer or longest tail-feathers exceed the middle by three inches. Bill wholly yellowish horn-colour; legs and toes wholly black. Colour of entire plumage the same as that of the common tern (*S. hirundo*), but the back is rather of a darker shade than that of the latter when adult. The black of the head does not reach within one-

* I am happy to connect, in English, the name of its describer with the bird—not as a matter of any honour to one so eminently distinguished as a traveller and a naturalist, but as a personal reminiscence of a gentleman whom I highly esteem.

third of an inch of the bill; space between the termination of the black plumage and the bill, pure white. The specimen is evidently adult.

"On visiting the collection of birds in the British Museum—where the utmost facility for reference and comparison has always been most kindly afforded me by George R. Gray, Esq.—I saw the same tern labelled '*Sterna velox*, Ruppell, Red Sea.' It was from this locality that Ruppell had the species, which is figured in his 'Atlas,' pl. 13 (1826). The *Sterna cristata* described by Swainson in his 'Birds of Western Africa,' p. 247, pl. 30, agrees in all details with my notes of *S. velox*, except in the colour of the back, which is said to be almost as white as the under parts."

Different statements having been made in Dublin respecting this bird being killed there, I have made further inquiries on the subject since the preceding was published. Mr. Watters assures me that he not only saw the fresh skin, but that he pulled away the flesh, himself, while quite red and recent, from the tibial and humeral bones, and extracted the tongue and part of the skull. I have also been favoured by Mr. Lynch of Cork-street, Dublin, with a note, stating that he shot the bird at a marshy pool near Kilbarrack (and Sutton), on the borders of the bay; he was not aware of its rarity, and by mere chance it was not thrown away.

It seems strange that this tern is not given a regular place in either of the late published works—Schlegel's 'Revue Critique des Oiseaux d'Europe,' or Degland's 'Ornithologie Européenne,' although it is mentioned in both, on the authority of the Prince of Canino (at p. 115 in the former, and vol. ii. p. 335 in the latter). I have not seen what was published by the Prince of Canino on the subject, but when commenting on my paper read before the British Association at Oxford, in which a notice of *S. velox* was contained, he mentioned it as a bird of the eastern Mediterranean, and, so far as he was informed, not found westward of Sicily.

To myself, the occurrence of *S. velox* in Ireland seems not much

more singular than that of others of the terns of the south-east of Europe. As the first procured in Western Europe, it is looked upon with surprise; but when a few other individuals have been obtained, the circumstance will be regarded as nothing remarkable. In the same way, when I noticed the *Sterna stolida* for the first time as met with in the European seas, the announcement was looked upon with wonder; but within a few years afterwards the bird was observed on the coast of France, and more recently in St. George's Channel.

The Caspian Tern (*Sterna Caspia*, Pallas), which has been obtained several times on the coasts of Norfolk and Suffolk, is not known to have visited Ireland;—or Scotland (Jard. Macg.); nor has the

Gull-billed Tern (*Sterna Anglica*, Montagu), though a few individuals have been procured in different parts of England.

THE SANDWICH TERN.

Sterna Cantiaca, Gmel.
,, *Boysii*, Lath.

Is of occasional occurrence on the coast in summer and autumn, both in immature and adult plumage.

It was first indicated as an Irish species in the Proceedings of the Zoological Society of London for 1833 (p. 33), from a specimen shot on the 14th of August, 1832, in Belfast Bay, that came into my possession in a recent state. At the indenture of the shore here, opposite Garnerville, called Harrison's Bay, a shooter was attracted by the call, such as he had never before heard, of two birds flying overhead, and shot one of them. It proved to be this species in its young plumage, as described and figured by Latham, under the name of *Sterna striata*. The perishable colours of the bill and legs (though changing little by drying in this species) were noted—tarsi, toes, and webs black; under side toes yellowish; bill blackish horn-colour, with yellow tip. On the

28th of July, 1838, a Sandwich tern, in full plumage, with several redshanks, and about twenty dunlins, were killed at the same shot (from a swivel-gun) in Belfast Bay, opposite "The Grove."

Its length from point of bill to extremity of tail is 15½ inches (wings extend nearly an inch beyond the tail); bill above from forehead to point, 1 inch 11½ lines; from rictus to point, 2 inches 9 lines; tarsus 1 inch 1 line; middle toe and nail measured in a straight line, 1 inch; carpus to end of longest quill (the first) 11½ inches; tibia bare for ½ inch; outer tail-feathers 9 lines longer than second pair; breadth of wings extended, 2 feet 7 inches. The colour was that of the summer plumage, as described by Montagu, in every particular but one, none of the primaries being tipped with black, as in his specimen, but instead, being throughout of a uniform tint; inside of the bill yellow.

The fowler who killed this bird saw fourteen Sandwich terns (which, from their size, black bills and legs, he at once recognized to be of the same species as the former one) together in the bay, on the 3rd or 4th of September, 1839. So tame were they, that he and another person on board a dredging vessel remarked, when relating the circumstance, that from its deck they could have brought down the terns with whips, but their only offensive weapon was the sand on board, with which they pelted them! On the 23rd of September, 1844, an adult bird was seen at the quay of Belfast, where, perched on one of the mud-lifting scoops, it admitted of a very near approach. These facts respecting the tameness of the birds may seem too trivial, but they indicate that the locality from which they came has been little visited by man. One of these terns, sent from Portaferry, Strangford Lough, to Belfast, for preservation, on the 16th of August 1844, was probably shot in that neighbourhood.

The following notes relate to the occurrence of the Sandwich tern on the Dublin coast. In October (?) 1831, one was shot at Clontarf; on the 29th of July, 1834, I saw two specimens—an adult and a young one (*S. striata*, Lath.)—which were shot that day by T. W. Warren, Esq., at the locality just named, on the borders of the bay. On one day in the month of September 1837, this gentleman saw at least a dozen Sandwich terns near Howth. On the 11th of May, 1842, one was seen on Dollymount strand, in the same quarter.

More recent information has led to the belief that the species might breed on that coast, and more especially the fact that Mr. Warren has seen or known the bird to be about Portmarnock or Malahide every year (now summer 1850) in June and July since the time he first met with it. About the 15th of June, 1850, one was shot and two others were seen at the island of Ireland's Eye. On the 17th of July, 1850, as mentioned under the Roseate Tern, Mr. Watters visited the Rockabill, a small rocky islet well known as a breeding-haunt of some of the more common terns, and saw there three of the Sandwich species, and found one of their eggs. The only tern he saw perched on the island was one of these. On his remarking to the boatmen how scarce they were, they said that the *large skirrs** fly daily inland to feed on fresh-water fishes in the small streams, and return to the rock at night! The birds alluded to as shot along the sea-coast (and there only, so far as I have heard) have probably been wanderers from this rock, including some seen in Drogheda Bay on the 2nd and 3rd of August, 1850.† Mr. Watters remarks, that "as we often from the land observe the swallows and martins flying low, while the swift is screaming at a great height, so the roseate, common, and arctic terns showed little timidity; but the large Sandwich species kept at a great distance, screaming loudly. Its flight is exceedingly beautiful, outrivalling even that of the buoyant Roseate, by its sudden turns and rapidity."

The preceding information respecting the breeding-haunt of the Sandwich tern, on the coast of Ireland, is all that can now be given, and from the limited number of birds seen at any period in that quarter, but few, I presume, have ever bred on the island. The bird is of more frequent occurrence both in England and Scotland than in Ireland, where my present information respecting it, is confined to the eastern coast. Mr. Selby gives an interesting account of the bird at its breeding-islets off

* *Skirr* simply is applied here to the species of ordinary size—the roseate, common, and arctic terns.

† By Mr. R. J. Montgomery.

Northumberland, and Sir Wm. Jardine supplies much information respecting it in Scotland. In the portfolio of Dr. J. L. Drummond I have seen a drawing of a Sandwich tern made by him when in the navy, from a specimen shot at Gibraltar. The species has a very extensive geographical range, embracing the coasts of Europe, Asia, Africa, and North America.

THE ROSEATE TERN.

Sterna paradisea, Brunn (1764).
„ *Dougallii*, Mont (1813).

Is a regular summer visitant, known to breed in a few localities on the eastern coast.

Templeton knew this species only from "one specimen shot in Belfast Lough." Further information was obtained respecting it on a visit made to the

Mew Island,

one of the three Copeland Islands outside the southern entrance, by Mr. Wm. Sinclaire and myself, on the 11th of June, 1827. One of these, a low, flat, rocky islet, but with short pasture affording food to cattle, is a chosen breeding-place of the terns, and either from these birds or gulls having formerly frequented it, bears the name of the Mew Island. Immense numbers of terns were flying around us, uttering their wild cry as we passed between the Mew and Lighthouse Islands, and as the day was delightful, it was extremely interesting to observe their evolutions. Poised beautifully in the air, with their wings merely wafting, or beating to maintain their position, they looked out keenly for their finny prey, which, soon as perceived, the wings were drawn quick as thought close to the body, and, like an arrow from a bow, they shot from such a height into the water within a few yards of us, as to be wholly immersed, or, more rarely, obtained their prey

at the expense of a partial ducking.* Landing on the Mew Island, we found a number of their nests, containing generally three eggs, deposited either on the surface of the dried *Zostera marina*, which had been drifted on the island, or on the bare sand between the ledges of the rocks. One or both of each pair seemed to keep fishing within sight of their nest, as, although we did not see any birds sitting on the eggs, they instantly and hurriedly made their appearance overhead on our near approach to their treasures, uttering their hoarse jarring cry, and continuing to fly about with great anxiety and consternation. After firing for some time at all the birds that came within shot, and having killed thirteen, we ceased:—of these, two were roseate, three common, and eight, arctic terns. It is well remarked by Sir Wm. Jardine, that—"All the terns are very light, and the body being comparatively small, the expanse of the wings and the tail so buoys them up, that, when shot in the air, they are sustained, their wings fold above them, and they whirl gently down, like a shuttlecock. The roseate tern is remarkably buoyant, and we could almost run below and catch the specimen in our hat before it reached the ground."† So soon as the young are ready to fly, they and their parents commence to wing their way southward, remaining for some time about Belfast Bay, where throughout the month of September they—*S. hirundo* and *S. arctica* in particular—are commonly seen. As none of the terns remain during winter, the inhabitants of the Copeland Islands are puzzled to know whence they come in spring. They say that they have never seen them on their progress to the Mew Island; but that every year in the month of May a heavy fog comes on, and after it has cleared away the rocks are studded with them! Although fancy is here called to aid, the remark suggests that they migrate in large bodies.‡

* Terns have frequently come within a few yards of a person of my acquaintance while fishing in a boat about Green Island, near Carrickfergus—where they are called *pirre-maws*,—and when little fish were flung into the air towards them, were sure to be seized before reaching the water.

† 'Brit. Birds,' vol. iv. p. 275.

‡ The Bishop of Norwich informs us, in his 'Familiar History of Birds' (vol. ii.

On the 13th of June, 1832, the Mew Island was again visited, and by shooting at a few of the terns indiscriminately as they came within shot, we procured one of the roseate, one of the common, and eight of the arctic species. I could distinguish the roseate when on wing from the other two by its colour and by its note, which (as well observed by Mr. Selby) resembles the word *crake,* uttered in a hoarse grating key. There were many of them. Their flight was still more graceful and buoyant than that of the other species. When they

"Sail upon the bosom of the air,"

the tail is borne so as to appear pointed; but is generally beautifully spread when their nest is approached, and they swoop towards the intruder in anger. Under similar circumstances, hawks of different species have the same habit. I have observed terns, too, apparently when not intent on prey, frequently pause, kestrel-like, in their flight, and remain with their bodies stationary in the air, but flapping their wings very quickly. Another tern cries *pirre,* from which call the whole genus here takes its name:—a third cry is *che-eĕp, cheep,* or *chip,* when uttered quickly; but this proceeded from birds so high in the air, that their species could not be determined, and I had to remain in ignorance whether this was the call of a third, or whether one species may not possess the two different calls.* The darker hue of the under plumage of *S. arctica* is not always so obvious as to enable us to distinguish it from *S. hirundo* on wing.

On the 24th of June, 1833, the Mew Island was again visited by Mr. William Sinclaire and myself. As in former years, we fired at all the terns that came within range, until

p. 243), with reference to gulls, that "it is positively asserted by the light-keepers as a very extraordinary fact, that they *all* instinctively return to the South Stack during the same night, on or about the 10th of February. * * * In the *middle of the night* they are warned of their arrival by a great noise, as it were a mutual greeting and cheering." In this work, p. 235, the tern is alluded to in a very interesting manner, in connection with the "Narrative of the Loss of the *Lady Hobart* packet."

* This would seem to be the cry of the arctic tern, from Audubon's remark, that it resembles "the syllables *creek, creek*" (vol. iii. p. 369); but this call was less frequent than *pirre,* considered that of *Sterna hirundo,* by no means so numerous as the former species here.

the number required for the purposes of science were obtained, and the result proved very different from that on former occasions, as of the six killed to-day, three were roseate, two common, and one arctic.* Of terns generally, I perceived a great diminution of numbers since 1827; but the roseate, which, as before, I readily distinguished by the call, &c., was, compared with the numbers of the other species, much more common than in 1827 and in 1832; we could to-day have shot many more of them than of the others: they seemed principally confined to one part of the island.† Being aware of Mr. Yarrell's opinion that the egg of the roseate tern is in general form longer, narrower, and more pointed at the smaller end than that of the arctic or common species, I looked with this view to all the eggs which I saw in nests on the island;—if nests they should be called, as all the eggs seen to-day were laid on the short pasture, owing perhaps to the birds being more than usually disturbed, and changing their place of laying. There were more cattle on the island than I had before seen, as well as more seekers after eggs. I examined also those collected by one member of a boat's crew, that landed just before us for the special purpose of gathering them; and out of about fifty, only one would be called by Mr. Yarrell the egg of the roseate, and all the others be considered those of the common and arctic; yet, from the number of terns of that species which we saw to-day, from their flying much nearer to us, and being a great deal more vociferous than the

* Their stomachs did not exhibit the remains of any food: the three roseate birds were males.

† This reminds us of what Mr. Selby has observed at the Farn Islands on the Northumbrian coast. In the 'Zoological Journal' for January 1826 (vol. ii. p. 462), he states that:—"About fourteen years ago the keeper of the outer lighthouse first noticed this as a new and distinct species. Information was given me of the circumstance, and I went over to ascertain the fact; and, having killed several, found them to be the *Sterna Dougallii*, Mont. Since that period they have greatly increased, and now form a numerous colony, which occupies a large space of ground near to that occupied by the arctic species; and they have a second station upon one of the Walmseys."

Dr. M'Dougall, who discovered the roseate tern on the Cumbrae Islands, Frith of Clyde, considered that there was not more than one of them to two hundred of the common tern, or, perhaps, more correctly speaking, of the common and arctic, the latter not being distinguished from the common at that period.

other two species, I cannot but think that a number more of the eggs examined must have been those of the roscate.* On seeing the boat's crew landing to collect eggs, we remarked to our boatmen that the season was now so far advanced that many of them might be found incubated; but it was replied, that, on the contrary, they were all fresh-laid that morning, the island being not only daily visited by egg-gatherers, but that boys sometimes remain there all night, sleeping under the shelter of a rock, that they may be the first at the gathering on the following morning. So incessantly are the poor birds robbed of their eggs, that our boatmen stated they can never bring forth their young until the time of hay-harvest, when the people are too much occupied to molest them.†

The birds themselves, too, suffered much this year. In one forenoon at the end of May a party butchered not less than fifty, of which about a dozen were the roseate, and all were afterwards flung away as useless. A dozen, all arctic, were killed on the 1st of June, and subsequently four of the roseate were sent from the island to a gentleman of my acquaintance. Our boatmen stated, that they remembered these birds more than ten times as numerous as at present. Their diminution is owing to their eggs being more than ever sought after, and to the increasing wanton persecution to which the birds themselves are subjected in being killed by heartless shooters, who have no object in view but their destruction.

I have been much pleased by remarking the following trait in

* Mr. Selby, who has had the best of opportunities for examining these eggs, does not mention any difference in *form* between those of the roseate and arctic species; but remarks that the eggs of the former much resemble those of the latter, "but are a little larger, and with the ground-colour usually more inclining to cream-white or pale wood-brown" (vol. ii. p. 471).

Eggs, represented in Hewitson's work as those of the common and arctic tern, I have frequently found in the same nest. This author admits that it is quite impossible to distinguish the eggs of these two species from each other with certainty; but that those of the arctic are generally the smaller of the two.

† Mr. Knox, in his most pleasing 'Ornithological Rambles in Sussex,' at p. 244, mentions a person having had a peculiar breed of dogs, which he successfully trained to hunt for the eggs of terns, ring-dotterels, and lapwings on the coast of that county; but it is to be hoped that the breed has become extinct, never to be renewed.

the character of the terns. When one is killed, or wounded, all within view of the poor victim fly instantly towards it, and bewail its fate in the most piteous terms. The quickness with which they perceive its fall is surprising. They dart down until almost touching it, and, observing that it cannot rise, keep circling over it with the greatest vociferation; in this act the three species join, making common cause, no matter which kind is victim. This amiable trait, as already mentioned of the gannet, at Ailsa, is sometimes taken advantage of at the Mew Island, for the destruction of the terns, and dead birds are thrown into the air to lure within shot the survivors, otherwise keeping out of range. A habit which Audubon remarked of the arctic tern, met with by him at several of its breeding-haunts on the coast of North America, is equally applicable to the common and roseate species, and probably to others:—that, "whenever one was wounded so slightly as to be able to make off, it was lost to us, and the rest followed it" (vol. iii. p. 368).

I have somewhere read that the lower animals are altogether devoid of that generous feeling for their neighbours in distress, which characterizes the amiable of our own species, and Mr. Jesse, in his popular 'Gleanings in Natural History,' states that in his opinion, friendship for each other is peculiar to the rook. But in addition to the terns and gannet, the redshank may be named. The gulls, too, exhibit the same feeling, and if one falls, all the species—the whole tribe of gulls—enact a similar part to that narrated of the terns, call it affection or what we will: *curiosity* at all events it cannot be on the part of the terns at the Mew Island, where they unfortunately have too frequent experience in being fired at for that to be the cause. Audubon (vol. iii. p. 107) mentions a similar trait displayed by the puffin, which will be found noted at p. 234 of the present volume. With respect to the *deer*, however, Shakespeare did not avail himself of the poet's license, but was strictly correct in attributing to that animal a character of the opposite nature, in his lines upon the wounded stag:—

"Anon, a careless herd,
Full of the pasture, jumps along by him,

And never stays to greet him; *Ay*, quoth Jaques,
Sweep on, you fat and greasy citizens;
'Tis just the fashion: wherefore do you look
Upon that poor and broken bankrupt there?"*

Mr. J. R. Garrett has supplied the following note, under date of *9th of August*, 1849:—"Terns were in great abundance at the Mew Island to-day. I endeavoured to estimate their number, and considered that there were not less than two thousand within sight. So long as we remained on the island they continued to hover over us, uttering their shrill screams, and showing much anxiety, many of them having small fish in their bills, intended, no doubt, for the young birds which had been hatched. On making a careful search we found a considerable number of eggs, the majority of which were addled. A few were, however, quite fresh, notwithstanding the advanced period of the season, and in four of them were young birds, whose cries were audible through the chipped shells. A boy, who resides on the neighbouring island, told me that he had taken from the Mew Island eleven dozen and three terns' eggs, on one day at the commencement of this season. Being desirous of procuring a few terns for preservation, we shot half-a-dozen at random—two of these were of the roseate, and the remainder were of the arctic species."

On the 16th of July, 1850, I visited the Mew Island in company with the gentleman last named, and others. We were equally astonished and annoyed to find that there was not a tern of any kind on the island; nor did we see one when going to or returning from it to Groomsport, the distance between the two places being about five miles. We were told by different persons that the birds came as usual at the commencement of the breeding season, but from being much fired at, and robbed of their eggs very soon after arrival, they all left the island, and not one had since been seen

* A fallow-deer which I saw in October 1833, had met with an accident in the deer-park at the Cave-hill, near Belfast, probably by having fallen down some of the precipitous cliffs, and his fore-legs were much bruised, though the bones were not broken. But he was put an end to by his companions, of which there was sufficient evidence from the wounds of their horns in his rear. The gamekeeper here stated, that whenever any deer in the park are unable to keep pace with the herd, the latter are sure to destroy them.

there by day. It is said that they come late in the evening, remain during the night, and leave at early day-break when, about the time of their departure, their calls are heard. Different persons made this statement, independently of each other; but I am inclined to consider it imaginary. The chief cause of their desertion seems to be owing to a man in charge of the remains of a vessel wrecked here last winter, living constantly on the island, though his habitation is certainly the reverse of conspicuous. It is about the smallest and most primitive human habitation I ever saw; consisting of a few old sails thrown over the timbers of the wreck in a hollow among the rocks, with an entrance, in dimensions very little exceeding that to a respectable dog-house, and altogether in picturesqueness well worthy the attention of a Prout. But in addition to him, there are men daily on the island working about the wreck. There have also of late been several boats' crews from Groomsport, daily at ebb tide, engaged in grappling for the iron of the splendid steam-ship *Sea King*, which was lost here.

A gentleman residing on the coast towards the entrance of Belfast Bay, remarked to me as a singular fact, at the beginning of August 1850, that the herring fry had come in this year without a single tern after them. The circumstance can at once be accounted for by the total absence of these birds from their only breeding-haunt in this quarter, the Mew Island.

Later in the season, however, at the migratory period, some terns did appear in the bay, as, on the 8th of September, a few came under my notice near Craigavad.

The roseate tern has very rarely been killed far up Belfast Bay, but at Conswater Point, within about a mile of the town, it has more than once been obtained, and here, the only one known to Templeton as Irish, was killed on the 22nd of June, 1821, in company with *S. hirundo*, of which four were brought down at the same shot. A roseate, a Sandwich, and a common tern, sent on the 16th of August, 1839, from Portaferry (Strangford Lough) to Belfast, to be preserved, came under my inspection, but I could

not learn any particulars respecting them. They may at that period have been on migration southwards, after breeding.

On visiting the Skerries—islands off Portrush, and near the Giant's Causeway—on the 12th of July, 1833, I found that terns are not numerous there, and was told that from being much disturbed by fishermen and others, they are gradually becoming scarcer. The surface of these islands as to structure and vegetation is very similar to the Mew Island, but the rocks present a more even surface, and are less favourable for their nests. Three birds, which we shot, were of the arctic species. We saw but one nest, also of this bird, one egg in which would be called that of the arctic, the other of the common tern. Judging from the cry of *crake* which I heard from one bird, the roseate species must be here.

When in Dublin, in May 1837, I learned that two roseate terns had been killed in summer on the barren Rockabill, four and a half statute miles from Skerries, on the Dublin coast; and subsequently I was informed that several had been shot in the last week of June the same year, a few miles from the island.* Hence it was presumed that the species breeds there. We cannot, as Mr. Selby has done, on the authority of the lighthouse-keeper on the Farn Islands, say when this bird came to the Rockabill, but only, that it was first noticed there (so far as my information extends) at the period named. On the 1st of July, 1840, it was ascertained that they were breeding there plentifully; sixteen of them were shot and sent to my informant: no other species of tern was obtained on the occasion.† The Rev. George Robinson visited this island on July the 12th, 1844, and saw hundreds of roseate terns, four of which were shot. *S. hirundo* was numerous there. The roseate, though abundant, was not so plentiful as the arctic and common united. In June 1847, he visited Rockabill a second time, and on that occasion found a great diminution in the numbers of the roseate terns, which was attributed by the boatmen to the number that had been shot by boating parties.

On the 17th of July, 1850, Mr. John J. Watters, jun., went

* Mr. T. W. Warren. † Dr. C. Farran.

to the island and shot four roseate, four common, and two arctic terns. He obtained the eggs of each species, twenty-three altogether, the whole of which were evidently laid on that or the preceding morning; those of the roseate being placed in small cavities beneath blocks of stone. No young were seen. A broken egg of the Sandwich tern, and three birds of that species, were observed. There were considered to be at least seventy or eighty roseate terns there, and twice that number of common and arctic combined, as they could not be distinguished on wing.

In June 1850, the roseate tern was shot at Lambay Island, and it has been procured in the bays of Drogheda and Dublin; such birds being probably wanderers from the Rockabill.

On questioning Mr. Glennon, in May 1837, respecting this species, he stated that in the month of June, a few years previously, he had received in a fresh state, from the coast of Wexford, about fifty specimens. Capt. Walker, of Belmont, near the town of Wexford, in a letter to me dated November 19th, 1836, remarked—"In the spring, different sorts of terns are common on the sand-banks here, and the nest of the roseate is ingenious: the sand is slightly hollowed, and, to prevent the eggs rolling away, it is surrounded by a small hoop about three inches in diameter, made of *bent* (a strong grass which grows on the sand hills), and put very neatly together."

At Roundstone, on the coast of Galway, the Rev. G. Robinson saw a tern in July 1844, which, from its call, mode of flight, general appearance, and difference from those of the common and arctic species, he thought must be the roseate, which was familiar to him from a recent visit to the Rockabill.

Such is all the information that can at present be given of this elegant species; but scanty as it is, that supplied to us respecting the roseate tern on the coasts of England and Scotland is not more full. The only breeding-haunts on the English coast that I find positively recorded, are the Farn and Coquet* Islands, off Northumberland, and Foulney Island,† off Lancashire; and on

* Hewitson's 'Eggs of Brit. Birds.'

† Ibid. On authority of Mr. John Hancock, of Newcastle on Tyne.

the Scottish coast, a locality on either side;—the Isle of May on the east, and Cumbrae on the west.*

Audubon thus writes:—"Beautiful indeed are terns of every kind, but the roseate excels the rest, if not in form, yet in the lovely hue of its breast. I had never [until the 28th of April, 1832, at the islet named Indian Key] seen a bird of this species before, and as the unscathed hundreds arose and danced as it were in the air, I thought them the humming-birds of the sea, so light and graceful were their movements" (vol. iii. p. 296).

THE COMMON TERN.

Sea Swallow; Pirre (North of Ireland).†

Sterna hirundo, Linn.

Is a regular summer visitant to the coast and inland waters.

Mr. Selby remarks, that this tern "is of rare occurrence upon the whole extent of the eastern shores of the north of England and Scotland, where its place seems to be supplied by the arctic and roseate‡ species" (p. 468). Sir William Jardine observes, that it "is a much more uncommon bird than either the roseate or arctic tern" ('Brit. Birds,' vol. iv. p. 277). He coincides with Mr. Selby in the statement of its rarity on the eastern side of Great Britain, referring at the same time to the two or three pair nidifying (as noticed by this author) at the Farn Islands, and adding that a few build on the Isle of May, Frith of Forth. "It breeds near the western extremity of Rockcliff salt-marsh, at no great distance from the junction of the rivers Eden and Esk, in the Solway Firth, and a few pairs on Solway Moss."§ At Foulney Island, coast of Lancashire, its eggs have been found, (as well as those

* It is supposed to breed on islets in the Solway Frith. (Mr. Heysham, Carlisle.)

† Skirr at Lambay; Kingfisher at Lough Neagh.

‡ The only localities yet recorded for the roseate along the whole eastern line of England and Scotland are two—the Farn Islands and the Isle of May.

§ Mr. Heysham, in Yarrell's 'Brit. Birds,' vol. iii. p. 397.

of the roseate species);* and have been also, at Pevensey Shingle, Sussex.† Mr. Yarrell notices several localities on the south-west, south, and south-east (or rather the more southern portion of the east) of England as frequented by this species, but without stating whether or not it breeds at them. Unless the precise season be mentioned, we cannot properly infer from the tern's presence at a locality that it breeds there, for it appears at many places on its vernal and autumnal migration near to which it never nidifies. Positive information is much wanted respecting the breeding-places of the several species of tern on the British coasts, &c.

In Ireland, the *common* tern justifies its name, and is more generally diffused than the arctic (although this bird is more numerous in certain localities), and greatly more so than the roseate species. Under the last, it will be found noticed at the Mew Island; at other parts of the

Down Coast

it breeds, as on several of the low rocky and gravelly islets of Strangford Lough. On visiting a number of these on the 20th and 21st June, 1832, the following note was made on the latter day:—Exclusive of *Sterna minuta*, of which two pair were seen on different islets (where no other terns appeared, nor were any of their nests found), we did not see more than about ten terns all day, and these were so very wild that we could not obtain specimens, nor even ascertain the species. The only cry was *pirre,—che-eep*, or *crake*, the notes of the arctic and roseate, not being heard; it was therefore considered that they were all probably *S. hirundo*. They appeared only about or within view of the islands containing their nests, of which a number were discovered. All of these, and there were several on Skart Rock, were regularly composed of dried plants of the genus *Fucus*, which had been thrown up by the tide. Two nests, which I observed on Bird Island, were composed of dried grass-wrack (*Zostera marina*); one of these contained three, the other five

* Mr. John Hancock, in Hewitson's 'Eggs of Brit. Birds.'

† Knox.

eggs:—the latter number had not unfrequently been found by one of our boatmen. The spot from which one or two of the terns rose to-day was kept in view. On going to it the eggs were discovered, and they felt warmer than I thought it possible they could have been from the mere heat of the sun. It is commonly believed at all the breeding-haunts of terns I have visited, that the bird never sits on its eggs during the day. Our boatmen admitted that although they had never seen terns leave the ground so that they could say they were just off their nests, yet on observing them rise at a distance they have "marked" the spot, and on going to it found their eggs. The various boatmen who have rowed us to the Mew Island made a similar remark. On the 16th of July, 1850, an intelligent boatman told us the belief here is that the sun incubates the eggs, which are always placed on the sunny side of the rocks; he remarked that it must be so, as the birds do not sit on the nests by day. It is also considered that two birds sometimes lay in the same nest, as six eggs (twice the usual number) have been found together. That the birds do not sit on the eggs during the day, or do so very rarely, is certainly the case at the several islands visited by myself. If they did so, they would be hardly less conspicuous than "snow upon a raven's back;" and hence instinct may prompt them—in localities in which they are liable to be disturbed, both for their own sake and that of their eggs—to absent themselves from their nests in the day-time.

Mr. Garrett has found terns' eggs perfectly fresh on islands in Strangford Lough, about or near which he did not see a tern all day.

The *S. hirundo* has, however, not only been seen sitting on their eggs, but shot in rising from them, on bare rocky islets of Bantry Bay.* Several birds were observed on their nests placed on the short grass of the island off Islay, to be hereafter mentioned. In the latter locality (and probably in the other also) these birds are very rarely disturbed.

In the month of June 1836 a number of specimens of the common and arctic terns, killed on the islands of Strangford Lough,

* Mr. G. Jackson.

came under my observation : on an island here near Portaferry, I observed many terns on the 19th of August, 1837. On the 22nd of June, 1846, I saw a pair of terns on Bird Island, and on Gull Island five birds, two of which were shot;—one fell in the sea and was lost to us, but the other was *S. hirundo*. About the Laithe Rock five terns appeared, and two of them were obtained; both the common species. They were long shots off, and only struck on the wing, so that I heard their cry in the air and on the ground when captured;—*pirre* only was uttered by those shot, (which proved to be *S. hirundo*,) and by all the others we heard to-day. Two of their eggs were found on the last-named rock, laid on hard drifted *Fuci*. The only discernible matter in the stomachs of those killed was a perfect *Gobius Ruthensparii*. On the 5th of June, 1849, it was observed (by Mr. J. R. Garrett) that the common tern had commenced breeding at Strangford Lough, but was not numerous. At Gransha Point, three of their nests were found, and four pair of birds seen :—a few others were flying about the lough. On the 23rd of May, 1850, it was remarked by Mr. Francis Rankin, who resides at Kirkcubbin on its borders, that there never were so many terns seen in Strangford Lough as this year, owing, he imagined, to the quietness of the islands, as they were not frequented by *kelp*-burners, that article being so much depressed in price as not to be worth making. They were noticed as not having yet commenced breeding. On visiting a number of the islands on the 6th of June, he did not see nearly so many as at the former date, nor more than about fifty birds; nor could he find an egg, though he had procured several before this time in the preceding year. They subsequently became still more scarce, as the former gentleman, on visiting the same localities on the 25th of June, saw but one bird and one nest of eggs; and extending his trip on the following day saw neither egg nor bird. The many terns seen therefore on the 23rd of May were doubtless on migration, and some of those of the 6th June must have retired to other quarters.

In the summer of 1830, a friend met with the common tern breeding in a salt-marsh at the extremity of Killough Bay, Down,

and with the aid of a telescope observed them feeding their young on the rocks in the vicinity. When at Dundrum, also in that county, on the 23rd of August, 1836, I was told that two species of terns, one much smaller than the other, and probably *S. minuta*, breed about there: the larger is, I have little doubt, *S. hirundo*. We saw a great number of terns, about the size of the latter, flocked together that day on the sands, or in company with kittiwake gulls.

It breeds on the sea-shores of Donegal;—at the Rockabill off the Dublin coast, and on the beach of this county at Malahide (1837), and Sutton. When crossing from the former of these two localities to the island of Lambay, on the 5th of June, 1838, we saw both the common and arctic terns in company flying over the sea. On the bare beach of the Wicklow coast, near Bray,* this species nidifies, as it likewise does on the Wexford coast, where it is remarked that the bird "makes no nest, merely depositing its eggs in a small hollow, probably formed by a revolution of its body. It also lays on the decayed stems of sea-campion." † It visits the coast of Waterford. Smith, in his 'History of Cork,' includes in the list of birds "The sea-swallow, called with us *spirres*," remarking that "they flock together, and breed on islands uninhabited near the sea-shores." That, written more than a century ago, is applicable at the present time. About the islets of Bantry Bay, amid the enchanting scenery of Glengariff, I saw numbers either of this species or the arctic tern (but not near enough to be distinguished) in July 1834, and eggs procured there came under my notice. In 1850, I learn that they are still very plentiful, and have various breeding-haunts, including bare rocky islets, about that noble bay. On the Sovereign Islands, off the coast of Cork, my correspondent has found their eggs laid on the short grass without any attempt having been made at the formation of a nest. When mackerel-fishing in Cork harbour at the end of July and early in August 1848 and previous years, he has also seen terns in such flocks or

* Mr. R. J. Montgomery. † Mr. Poole.

"clouds," that it was considered he might by following them have killed a hundred in a day. He has shot several in a forenoon that came directly in his way: all of which were the *Sterna hirundo*.* At Ballybunian, on the coast of Kerry, this species was observed in 1833 by Capt. Sabine.

In July 1834, I observed a number of terns in the bay of Galway, near the town; and Mr. R. Ball, when visiting the islands of Arran off that coast, on the 12th of June, in the following year, found the nests of terns (*S. hirundo?*) containing eggs on the beach of Straw Island. On Deer Island, and one or two other islands off the Galway coast, this or one of the nearly-allied species breeds in quantity and in company with the *Sterna minuta*:—both appear on wing together in pursuit of prey. When feeding on sprats they have come within two or three yards of the boat in which my informant (the late Mr. John Nimmo) was fishing. On the rocky Hards Islands, off the same coast, where it is called *durogue*, the *S. hirundo* nidifies; the species being ascertained by a young bird having been shot there on the 1st of August, 1844.†

Fresh-water Breeding-haunts.—Montagu was not aware of this species breeding at any but marine localities in England, but its doing so about the fresh-water lakes of Ireland is of annual occurrence. When at Port Lough, a small lake or *tarn*,‡ on the north-west of Donegal, on the 29th of June, 1832, I was conveyed in a "corragh" to its two islands, where this species, with several of its nests containing eggs, were observed. The nests were placed among loose stones, and all composed of the common reed (*Arundo phragmites*) and *Equisetæ*, both of which grow on the islet;—a nest of the black-headed gull and sandpiper were likewise found there. On visiting Ram's Island, in Lough Neagh, on the 15th June, 1833 (in company with Mr. William Sinclaire), for the purpose of ascertaining what species of gulls

* Mr. Robert Warren, jun. † Rev. G. Robinson.

‡ From Willughby's 'Ornithology' we learn that—"In the northern parts [of England] they call them *terns*; whence Turner calls them, in *Latine*, *Sternæ*, because they frequent lakes and great pools of water, which in the north of England are called *tarns*"!—p. 353.

and terns breed on the narrow strip of ground adjoining it, we found the tern to be *S. hirundo,* of which there were considerable numbers, but having killed three required as specimens, we ceased to disturb them further. Several of their nests were seen, none of which contained more than three eggs, this being the usual number. I looked particularly to these, as I had done on other occasions, with reference to the determination of the species from the eggs alone, as we can frequently find them when the birds will not approach sufficiently near for their species to be determined. Some ornithologists consider the egg of *S. hirundo* to be rather larger and more round in form than that of *S. arctica,* and these were certainly about the roundest of tern's eggs that I had seen. This character may therefore be generally correct, though the difference between the eggs of the two species is by no means well defined. As a breeding-place of the black-headed gull, the locality is more particularly noticed. The common tern breeds on several other islets of this great lake; among others, on Scawdy, near Maghery.* Close by its margin, at Massareene Park, on the 31st of July, 1846, several of these birds came under my notice, one of which dipped frequently into a little shallow piece of water amid the sands that could only have contained the smallest of fish—the stickleback. Off Shanescastle Park, on the following day, several appeared fishing, either singly or in company, and even a couple sometimes produced such a noise by their continual cries that, until they came in view, it was imagined there might be a "play" of them at a shoal of fish;—(August 3) it was beautiful to observe a number, during a lovely sun-set, fishing and descending from a considerable height in a spacious bay to the southward of Toome. The fry of perch or of pollans (*Coregonus pollan*) were probably their food, as a quantity, especially of the former, lay strewn upon the beach;—the refuse of nets, which were busily plied this evening. (August 5) At Ram's Island I learned, that not a tern had a nest there this year on account of their haunt being covered with water at the breeding season. In 1850, about three pair were seen here by a

* Rev. G. Robinson, 1850.

scientific party on the 4th of June, and two of their nests containing eggs discovered.

Another inland breeding-haunt is at Lake Clay (south), near Killileagh, county of Down, where about twenty were seen, and two shot on the 16th of July, 1845. Their nests are placed on rocky, stony, and grassy islets. At one period they were in great numbers here, and even in 1843 so many had nests on the chief islet that it could hardly be walked over without their eggs being broken. Half-a-dozen nests were found on the present occasion, but all empty except two that contained young. The old terns pursued and darted down at all birds, including even herons and herring-gulls, that flew over any part of the lake; and these comparatively huge birds were evidently annoyed at the assaults of the terns, and kept shifting their position to avoid them.*

I have seen specimens of the *S. hirundo* from a lake in the county of Monaghan, and have been told that both it and the *Larus ridibundus* breed numerously (or at least did some years ago) on islands in Lough Egish. The breeding-haunts of this gull seem equally suited to the *Sterna hirundo*. The tern lately bred also at Chantance and Shircock Lakes, in that county.† It frequents the river Shannon in summer, whither it is believed to be attracted by the salmon-fry. The first day on which its appearance there was noted in one year was the 21st of May.‡ During a tour made to the west and south of Ireland, by Mr. R. Ball and myself, at the end of June and beginning of July 1834, a tern of the common species came within a few yards of us at Lough Carra. A few terns, most probably *S. hirundo*, but not near enough for their species to be distinguished, were seen on Lough Corrib, on some of the islands of which our boatmen stated that they breed, and where I am assured they do until the present period (1850).

The marine and fresh-water localities, named as breeding-haunts of the common tern, must be considered only as an indication of those resorted to by the bird, and such as are positively known to my correspondents or myself. They must be greatly more numerous around the coast, and throughout the fresh-water lakes of

* Mr. Darragh. † Mr. Robt. S. Evatt, 1845. ‡ Rev. Th. Knox.

the island. The observation as to the localities enumerated will equally apply to the roseate, arctic, and other terns.

Sir William Jardine has remarked of the common tern, that, "in its breeding habits, it differs from the roseate, and resembles more nearly the lesser tern, seeming to prefer a shingly beach or low-lying ground to rocky islands."* My observation agrees with this as a general remark, but it is far from being of universal application. The few localities known to me on the Irish coast in which the *S. minuta* breeds, are near to the haunts of *S. hirundo*. On the rocky Mew Island, where *S. hirundo*, *S. arctica*, and *S. Dougallii* nidify, the habits of the three species are in all respects similar. Its nests have already been noticed on other rocky, as well as gravelly, sandy, and grassy, islets. The common tern is more cosmopolite than any of the others; breeding in localities of various kinds, and, as we have seen, both about fresh-water and the sea.

Terns of the common and two closely-allied species visit the coast of Ireland at the beginning of May. In 1846, seven or eight were then observed in Dublin Bay.† On the 9th I saw several fishing close to Belfast Quay, in 1847; and in 1849, they were first noticed about Drogheda, on the 7th of that month.‡

The common tern, or indeed any species, is very rarely seen far up Belfast Bay previous to, or during, the breeding season; but at a favourite locality of this genus—Conswater Point—where a stream flows into the bay, several were observed for some days, about the 6th of June, 1843.§ From birds killed here, I have taken the fifteen-spined stickleback (*Gasterosteus spinachia*, Lin.); a fish which they also feed on at the Copeland Islands. They are occasionally seen for some time throughout the bay early in August, when the breeding season is over. On the 8th of that

* 'Brit. Birds,' vol. iv. p. 277.

† Mr. Darragh.

‡ Mr. R. J. Montgomery.

§ The only example of the roseate tern known to Mr. Templeton and Mr. John Montgomery was killed here.

month, in 1845, two flocks, consisting each of twenty birds, were observed fishing off Ballymacarrett. They joined together, and on the night of the 9th, at ten o'clock (no moonlight), were heard flying over the land, perhaps on their autumnal migration. From the 21st to the last day of the month that year, they were numerous, and covered over the buoys of the Channel at high tide as closely as they could sit: on one day it was considered that not less than a thousand birds were perched upon them. The earliest date of their autumnal appearance, far up the bay near the town, in another year, was the 12th of August: September is the chief period of their visit.* At the end of this month in 1845, and other years, they collected together in great numbers far up the bay (about two miles from the town), in the evening, and alighted along the edge of the channel. Flocks of many hundreds were thus seen by moonlight, and, when they first arrested attention, were imagined to be masses of snowy foam along the margin of the flowing tide; but on taking wing, their loud and well-known cries proclaimed their species. Although one of these birds, which was shot, and came under my observation, was an arctic tern, I place this note along with others of the same kind, as *S. hirundo* was probably also of the party. The latest noted as killed here were four obtained on the 1st of October, from a flock of about twenty; they were the young of the year and old birds of *S. hirundo*. From the circumstance of both old and young being generally found associated here at this period, they probably move southward in company. On the very stormy

* *Sterna hirundo.—August* 12th. On examination of two adult males killed today, a great difference appeared in the colour of their primaries. In the one, as they appear when the wings are closed and the white inner web concealed, they are blackish-brown throughout, and in the other of a hoary white or pearl-grey. *July* 16th. Of two very young birds taken from nests at Lake Clay, one was a little older than the other, and had the tarsi and feet pale orange, while those of the younger were of a deep flesh-colour. The bills of both, as in the old bird, were black towards the tip. This is the ordinary hue. The following note indicates an occasional departure from it. *Sterna hirundo.—September* 17th, 1839. Four of these birds, shot from a flock of five at Conswater this evening, were brought to me. Two were adult, and two, the young of the year. Of these latter, one was much larger than the other, had the legs and feet of a reddish flesh-colour, and the bill dark greenish-ash: the smaller bird had the legs, feet, and bill greenish; the last being the darkest in shade.

day of the 11th of October, 1838, a flock of from forty to fifty terns was seen flying close to the land over Conswater Point, in a southerly direction, when they were believed to be on migration. The description of them applies to *S. hirundo*, *S. arctica*, or *S. Dougallii*, with their young, as there were "two sizes" of them:—the young birds now appear much smaller than their parents, from not having the long tail-feathers. Terns sometimes ascend the river Lagan in autumn, following its meanderings for above ten miles inland; about Lambeg they have frequently been seen. At the end of August 1838, a young *S. hirundo* was found dead on a mountain, about a mile from Clonmel.*

Sir William Jardine ('Brit. Birds,' vol. iv. p. 277) remarks respecting the common tern—"We do not trace it with authenticity northward to the islands of Scotland, except that it is mentioned by Mr. John Macgillivray on the Outer Hebrides." When at Islay, in January 1849, I learned that a tern, either *S. hirundo* or *S. arctica* (as none with the black bill of *S. Dougallii* had ever been observed), bred in great numbers annually on Kinrevock, or the rabbit-island, which is rocky, with a good deal of short pasture. It was considered by P. Mackenzie, head keeper, that about 500 pair bred in 1848, and several previous years, on that and a closely adjacent islet. He pointed out to me in the museum of native birds, &c., at Islay House, a specimen of the tern which breeds there;—it was *S. hirundo*, and no other species of *Sterna* was in the collection. When the island was visited by my friends for the purpose of seal-shooting, in May 1848, the terns had not commenced laying, and annoyed them very much by their cries alarming the seals, so that not a shot could be had at them on the rocks. In May 1849, there were considered to be about twenty terns here for one in 1848. The number of their eggs taken will be found mentioned under the Common Gull. It would be interesting to ascertain whether the tern found breeding in the islands of a loch amid the woods of Altyre, five miles from

* Mr. R. Davis.

the sea,* or at other fresh-water lakes in Scotland, be the *S. hirundo*, as it, alone, have I found selecting for its nest such places in Ireland.

In the year 1826, at the end of May, I saw the *S. hirundo* commonly in the fens of Holland, and towards the end of July about the *lagunes* of Venice. In 1841, when descending the Rhone from Lyons to Avignon, on the 9th of April, I remarked some terns, most probably of this species, at the wildest parts of the river where bordered by extensive sandy tracts; and when proceeding by water from Constantinople to the Valley of Sweet Waters, on the 14th of May, several birds of this genus which appeared, resembled the *S. hirundo*. Towards the evening of the 21st, a number of terns, similar to this species, were observed flying in company to a little rocky islet—very like a breeding-haunt—off the north-east side of the beautiful island of Mytilene; and in a locality of the same nature near the island of Paros, I saw a couple, apparently of the *S. hirundo*, about ten days afterwards. I mention those seen in the south-east of Europe with some doubt, as none of them were obtained for examination. Recent authors, so far as I have referred to them, with the exception of Capt. Drummond, do not positively state that the *S. hirundo* is found there, though the *Sterna affinis* is so.†

On the 13th of July I remarked this species on the Lake of Constance, and on the 15th and 16th, when proceeding down the Rhine from Basle;—at the wild desert-like sandy banks of the river not far from that city, were numbers, both of *S. minuta* and *S. hirundo*: such of the latter as came near were adult, and the manœuvres of both species satisfied me that they breed in marshes at the river side. Thence to Cologne they appeared occasionally, and dashed down from a height into the muddy Rhine, in which human vision was unable to detect any object, just as they do into the clear pure sea.‡

* St. John; 'Wild Sports,' &c., chap. xxv. p. 201.

† Captain Drummond states that *S. hirundo* is common at Corfu in spring, and one specimen was obtained by him in the island of Crete, on the 18th of June.—'Ann. Nat. Hist.' vol. xii. pp. 422, 427.

‡ Turning to the fine old work of Willughby, after the above was written, I find

Audubon (vol. iv. p. 77) describes this tern as ascending the Mississippi, and frequenting large lakes bordering the Gulf of Mexico.

THE ARCTIC TERN.

Sterna macrura, Naum. (1819)
,, *arctica*, Temm. (1820)

Is a regular summer visitant,

As recorded in the Proceedings of the Zoological Society of London, in 1833. This species, noticed in connection with the roseate tern, came under my observation in June 1827, at which period, from being undescribed in any work on British birds, it was unknown to me, and believed to be an ornithological treasure, for its specific difference from *S. hirundo* was at once apparent. A little research, however, showed that the species was known to Mr. Selby, and included in his very interesting paper on the 'Birds of the Farn Islands,' (published in January 1826, in the second volume of the 'Zoological Journal,') and with the additional information of Temminck, who had described the species in 1820, all was clear.* Following the example of Mr. Selby, I drew up and read to the Belfast Natural History Society, in July 1827, a paper on the Birds of the Copeland Islands, off the coast of Down, in which the *Sterna arctica*, with the allied *S. hirundo* and *S. Dougallii*, were fully treated of:—some additional distinctive characters to those given by that author were then pointed out, but now that the species is so much better known, it is unnecessary to repeat them here.

Under the Roseate Tern, particulars of *S. arctica* at the Mew Island, Down, and the Skerries, off the north of Antrim, will be

the observation that—"They frequent rivers far remote from the sea, as for example the Rhene, about Strasburgh, where they were taken, described, and painted by Leonard Baltner, by the title of *Ein Speurer*, who tells us also that they build in gravelly and sandy places by the bank of the river, so that if it happen there be a floud in their breeding time, their eggs are marred, and their nests destroyed."—p. 353.

* Naumann, it appears, indicated the species in the *Isis*, in 1819, under the name of *S. macrura*.

found. On the 25th of June, 1836, an ornithological friend visited some of the islands of Strangford Lough, and shot many arctic and common terns, about four of the former to one of the latter; he did not see any of the roseate species. I was much pleased to hear that the farmer who rents these islands, and on whose invitation my friend visited them, wrote to him that this was "the last week of the terns," meaning thereby, that it was the latest period at which they should be killed, in consequence of their just commencing incubation. Two arctic terns shot in this lough, southward of Kirkcubbin, on the 6th of June, 1850, came under my notice. When about Horn Head, county of Donegal, in the last week of June 1832, I saw some terns apparently of the arctic species, and the low rocky islands off that coast, between the headland just named and Bloody Foreland Point, appeared, from the mainland, most suitable localities for their breeding—resembling the Skerries off Portrush, and the Farn Islands off the Northumbrian coast.* In Clew Bay, county of Mayo, we, on the 28th of June, 1834, shot one of these birds near Minish Island, and saw several others, both on wing and on little heaps of stones rising above the waters of the bay: they doubtless breed on some of the many islets there. At the Hards islands, Galway coast, arctic and common terns were observed on the 1st of August, 1844.† I was informed by Mr. T. F. Neligan (in 1837) that the arctic tern is common on the coast of Kerry, in summer;‡ and on the 7th of July, that year, six fresh specimens sent thence to Dublin by my informant, came under my inspection. This is the only species of tern known to Mr. R. Chute on the coast of Kerry, where it breeds on a small island in the Blasket Sound called Beginish; on the Magharee Islands

* Sir William Jardine remarks that this species "seems to prefer the shingly beach to rocks" ('Brit. Birds,' vol. iv. p. 279), but on the latter it has chiefly occurred to me, and seemed more partial to them than *S. hirundo*.

† Rev. G. Robinson.

‡ In the Appendix to Ross's Second Voyage, it is stated, at p. 33, that the arctic tern "has lately been found abundantly on the west coast of Ireland in the winter season." From Capt. Sir James C. Ross, I learned that this information was derived from the late Joseph Sabine, Esq. Mr. R. Chute has never known this species to be on the coast of Kerry in winter (1850).

(plentifully), and Muckalaw Rock, Tralee Bay (1850). On the 8th of May, 1837, I saw two fresh specimens which had just been killed on the North Strand, Dublin Bay; and on the 5th of June of the following year, as I crossed from Malahide to Lambay Island, this species, and *S. hirundo*, appeared flying in company over the water. On the 11th of May, 1842, an arctic tern was shot on Dollymount Strand, coast of Dublin; from all of which circumstances there can be little doubt of the species breeding in that quarter. I have since ascertained that the Rockabill is a breeding-haunt, as noticed under the roseate species. Of many terns shot during the months of August and September 1850, in Drogheda Bay, nearly all were arctic: they outnumbered all the other species by at least ten to one.*

This tern is more a marine bird than the common species, differing indeed in a striking manner from it in this respect; and, so far as my own observation extends, selecting for breeding-places only maritime localities. This is a remark which I am not aware of having been made before; but, on looking to the sites named by Mr. Selby, Sir Wm. Jardine, Mr. Yarrell, and several other authors, in Great Britain; by Dr. Richardson and Mr. Audubon, in North America; I find they are all marine. I should not, however, be disposed to characterize the species positively, as breeding only in marine localities, for all the nesting-places of *Sterna minuta* known to me in Ireland are also marine; but so far up the Rhine as the neighbourhood of Basle I have met with it in the the middle of July (1841), and felt well assured that its breeding-haunts were on the wild sandy banks of that great river. At maritime stations only have I known the roseate tern breed in Ireland. The *Sterna hirundo* breeds abundantly about our fresh-water lakes as well as on the sea-coast.

Very rarely have I known the arctic tern to be even seen inland. On the 13th of June, 1832, a remarkably fine and large specimen (not exhibiting any external injury) was found dead at Springfield, near Belfast. Distant above eighteen English miles

* Mr. R. J. Montgomery.

as the Mew Island is from this place, I should have imagined the bird to have been probably wounded there by us on that day—as wounded sea-birds often fly inland—but we were told that this or a similar tern had been observed about a large sheet of water at the locality on the 9th of the month. One found dead about the 1st of May, 1837, on the banks of the river Barrow, near Bagnalstown (about twenty-eight miles in a direct line from the sea, or extremity of Waterford harbour), was shown to me by Mr. Glennon, to whom, on account of its being a species never seen before in the district, it was sent to be preserved. A remarkable flight of arctic and common terns appeared in the southern and western parts of England during high winds in May 1842, and great numbers were killed; the 7th, 8th, and 9th of that month* being the days of their occurrence particularized. Mr. H. E. Strickland and Mr. Austin noticed the circumstance in the 9th volume of the 'Annals of Natural History' (pp. 351, 434, and 518); Mr. Yarrell treated further of it in his work on British Birds; to which it has since been added, that "there were multitudes along the coast and harbours of the north and south of Cornwall and Devon" (Couch), and "at various places on the coasts of Hampshire, Sussex, and Kent" (Knox). A month after that time, the unusual circumstance of a large flight of terns took place in the south of Ireland. On the 6th of June, and for several days afterwards—according to Mr. R. Davis, jun., of Clonmel—there were great numbers about all the rivers in that quarter; he procured several of them. On being written to particularly with respect to the species and the exact time, he replied:—they were all arctic, as observed at Cork, Limerick, and Clonmel; they were abundant in Limerick during the third week of July (their visit extending over two or three weeks, at least):—they occurred on the Shannon in immense profusion, and "were so little used to *man* as to be frequently knocked down with sticks." Early in the summer of 1850, an

* Not "June," as inadvertently mentioned by Sir Wm. Jardine ('Brit. Birds, vol. iv. p. 280).

arctic tern was shot at Lough Neagh,* when, I presume, on its way to some marine breeding-haunt.

Very rarely, arctic terns—doubtless late birds of the preceding year—are shot at the breeding-stations before having attained full adult plumage. I have met with two such, killed on the 13th and 18th of June, in different years, at the Mew Island. They had the forehead and fore part of the crown of the head pale greyish-white; feathers of the hinder part of the crown white, tipped with black; back of the head and nape, black; bill, wholly black; tarsi and toes appear blackish, but on close inspection may be termed dark reddish-purple;† upper surface of webs reddish-purple, under surface vermilion-red, a little clouded with dark purple; tarsal joints and under surface of toes bright vermilion-red. These birds differed much in size, one of them being the largest of the species that has come under my notice. Its length, from the point of the beak to the end of the longest tail-feathers, 17 inches, being 3 inches longer than several specimens of *S. arctica* killed at the same time; but this difference was chiefly in the superior length of its tail-feathers; bill 2 inches from rictus to point, 1 inch 4½ lines from forehead to point; wing, from carpus to end of first quill, 11 inches. The differences between this bird and the other arctic terns obtained on the same occasion led me at first to consider it a distinct species, and a minute description was drawn up from the recent specimen:—this was exhibited at a meeting of the Zoological Society of London, and is briefly noticed in the "Proceedings" of that body for 1833, p. 33.

Although the arctic and common terns may daily appear very far up Belfast Bay after the breeding-season, they are comparatively seldom seen previous to that period: a specimen of the former, shot near the Long Bridge at Belfast, on the 3rd of May,

* Rev. George Robinson.

† It appears singular to me that they should ever assume this dark colour, as the tarsi of the young birds shot in the autumn of their first year are of a deep flesh, or very pale salmon hue, and I should have expected them, like those of the *Larus ridibundus*, to become gradually of a deeper tint of red, until that of maturity were attained. Captain Sabine remarked of arctic terns, shot during Parry's voyage, that the legs were changing from black to red. I have seen this colour only in birds when in the next stage to maturity.

1837, came under my inspection; in its stomach were the remains of a sand-eel and other fishes.

A comparison of the number of arctic terns visiting the coasts of Ireland and those of Great Britain cannot satisfactorily be made, as much is yet to be learned of the distribution of the species, especially around the latter island. Even on the southern coast of England, on Pevensey Shingle, during May and June, the arctic is more numerous than the common tern.* This species, like the common and roseate, inhabits the coasts of North America.

THE WHISKERED TERN.

Sterna leucopareia, Natterer, Temm.
,, *hybrida*, Pallas.

Has in one instance been procured,

And by the gentleman who shot the *Sterna leucoptera*, to be hereafter noticed.† They both attracted his attention as rare birds when he was boating in the Bay of Dublin, an amusement to which at one period he devoted much of his time: the *Tringa rufescens* also was obtained by him there.

The specimen of the whiskered tern—which is in adult plumage—came under my notice in the fine collection of rare native birds belonging to T. W. Warren, Esq., of Dublin, in March 1847; and in the course of that year I noticed it in the 'Annals of Nat. Hist.,' vol. xx. p. 170.

The following notes were drawn up from it:—

	in.	lin.
Length (total) about	10	0
,, of wing from carpus to end of quills, about . .	10	0
,, of bill above from forehead to point . . .	1	1
,, of tarsus, about	0	10
,, of outer toe and nail	1	0

Feet considerably larger than in *Sterna arctica*.

* Knox, 'Ornith. Rambles in Sussex,' p. 245. † Mr. John Hill.

Colour. Head (above that portion which is in a line with the upper mandible) and nape jet black, as in *S. hirundo*; sides of head for ¾ inch from the bill, having a stripe of pure white. From the upper part of the breast to the vent (entire under surface) blackish-grey. Vent-feathers and under surface of the tail, whitish. Upper surface of wings and tail, dark grey, but lighter than the under surface; shoulder or ridge of wing on the upper surface, white.

Bill and legs have faded to a pale yellowish horn-colour.

In the 2nd edition of Yarrell's work, published in 1845, one individual only was recorded as obtained in Great Britain;—near Lyme, Dorsetshire, at the end of August 1836—but another has since been procured, of which we have the following account:—

"An example of the whiskered tern * * * was shot on the 17th inst., whilst flying high over the Hickling Broad. It proved to be an adult female, and contained ova in an advanced stage; the largest being apparently almost ready to receive the shell. In the stomach were found the remains of about twenty of the larva of the broad-bodied dragon-fly."*

Temminck, in 1820,† described this species as a new one, discovered by M. Natterer of Vienna, in the south of Hungary, and as having been found in the marshes of Capo d'Istria and on the coasts of Dalmatia; also that M. De la Motte, of Abbeville, had, on one occasion, seen several individuals, and killed three of them in a marsh on the coast of Picardy. It has since been ascertained to breed annually in the south of France.‡ Specimens of this bird in the British Museum are labelled "*Hydrochelidon*§ *hybrida*, India? Hardwicke bequest," and "Cape Seas, Dr. Andrew Smith's collection." If it be the *S. hybrida* of Pallas, this name should probably have the advantage of priority; his work, in which it is described, being published between 1811 and 1831.‖

I had the gratification, on the 30th of April, 1841, of observing for a long time on wing, over a marsh a few miles northward

* J. H. Gurney, Wm. R. Fisher: June 30, 1847. Contribution to the 'Zoologist' for August 1847, p. 1820.

† Manuel, 2nd edit. Part II. p. 746.

‡ Degland, 'Ornith. Europ.' tome ii. p. 354. § Boie.

‖ Ibid. ,, ,, p. 353.

of Navarino, in the Morea, a tern of this species, which admitted of so near an approach as to leave no doubt of its being *S. leucopareia*.

THE LITTLE TERN.

Sterna minuta, Linn.

Is a summer visitant, which breeds annually on different parts of the coast.

Templeton tells us that he "once observed a single pair in Belfast Lough, and that on a tour round the coast of Down on the 5th and 6th of June, 1810, they appeared on the shore at Lecale as common as *S. hirundo*:" he adds that "their note is sharper and more tremulous than that of the latter species."

This pretty creature, so interesting from representing in miniature the more common tern, first occurred to myself when visiting the many islands of Strangford Lough, on the 20th and 21st of June, 1832. As we approached the Black Rock of Ring Dufferin, I perceived, at a considerable distance, a tern, which, from its diminutive size, was concluded to be *S. minuta*. When near to it, another came in sight, and one of them being shot, was found to be of this species. Previous to landing on 'Dunnyneill' Island, I saw another rise from the gravel on the beach, and, on going to the spot whence it rose, found three eggs deposited in a depression of the bare ground. A second bird soon appeared, which we had the cruelty to shoot; and, after having embarked on leaving the island, I noticed the widowed bird to alight on the spot whence the eggs were taken. None of our crew had ever observed this species before. The call is *pirre*, like that of the common tern. No other species was seen, nor were any of their eggs found on either islet where *S. minuta* was met with. Mr. R. K. Sinclaire visited 'Dunnyneill' on the 25th of June, 1836, in the hope of seeing this tern, and successfully, as three or four pair appeared: they admitted of a near

approach—two nests containing eggs were found on the shingly beach. I have not learned any other particulars respecting this bird about Strangford Lough with sufficient precision for notice here, excepting that a pair were seen about the islands off Ardmillan, in the last week of June 1849. When at Dundrum, on the coast of the same county, on the 23rd of August, 1836, I was assured by a shore-shooter, that two kinds of tern, one much smaller than the other, and evidently, from his description, *S. minuta*, breed on the coast there. We saw many terns that day (though not *S. minuta*), in flocks by themselves on the sand, and also mingled with kittiwakes, black-headed and lesser black-backed gulls.

In summer and autumn, the little tern still occasionally appears in Belfast Bay. In the middle of June 1839, seven were seen together, off the Long Strand, for about an hour, and admitted of a very close approach, as one also did about that place on the 14th of September the same year. In 1841, three appeared there on the 10th of June, and one on the 5th of August. In September 1843, again, four, in that locality, and about the same time six, at Holywood bank were observed. In the autumn of 1844, six appeared seated on a large stone off the Long Strand; and perched on a small buoy of the harbour five birds admitted the approach of a small boat within about eight yards of them, on the 26th of August, 1845.

A specimen, shot near the Giant's Causeway, in September 1831, came under my inspection. The species is said to be common on the northern coast of Donegal.*

By the late Mr. John Nimmo, of Roundstone, I was informed that two species of tern, of which one is the *S. minuta*, breed on the islets of the Galway coast; and both in quantity on Deer Island, and one or two others. They are said to appear on wing together, and to breed in company: they have come when preying on sprats within two or three yards of the boat in which he was fishing. Dr. Farran gives an interesting account of this species, as seen by him and Mr. Nimmo, at the Hards Islands, off the

* Mr. J. V. Stewart.

Galway coast, in the summer of 1838. He observes, that, "on turning into a small ravine, there appeared within twenty yards a cloud of the lesser terns, plunging incessantly into a pool, which the receding tide had left filled with water: a flock of swallows preparing for migration gives but a faint idea of their numbers; but what surprised me more, was their permitting my near approach without exhibiting the slightest fear or distrust, still continuing, although now not a yard from me, plunging and screaming as if I were but a shadow. My curiosity was greatly excited, and, stooping down to examine the pool, I found it to be almost a living mass of herring-fry, each about an inch and a half in length: this fully explained the cause of such a congregation. For a moment I could have imagined myself placed on one of those beautiful isles described by Mr. Darwin in his 'Zoology of the Voyage of the Beagle,' where the birds exhibit no fear on the approach of man, and where a perfect confidence reigns. I was determined not to give my unsuspecting friends, the terns, any cause of regret for the unlimited confidence placed in me, and endeavoured to assist them in their pursuit by putting my hands together, and commencing to bale out water and fry; but in this I lost both time and labour, for not a single fry would they take when thrown out and exposed on the rock; but if by chance it fell into a crevice containing a little water, it was instantly seized and swallowed. The Hards Islands are composed of granite, much intersected by dykes of hornblende: the latter, being much fractured, is constantly wearing away, by the action of the heavy Atlantic surges, thus leaving alleys or ravines, faced on both sides by perpendicular walls of granite, which, seeming to be stratified, present a singular appearance." They were mere visitors to these islands, and not one was to be seen there at the same period of the year in 1844.*

The little tern is mentioned by Colonel Sabine, as seen by him in July 1833, about the caves of Ballybunian, on the coast of Kerry. Small flocks of six or eight birds occasionally appear in

* Rev. Geo. Robinson.

Cork harbour.* At the Keroe islands, on the south coast of Wexford, they and their eggs have been obtained, the latter placed in a mere hollow of the sand or gravel: in a few instances the number in a nest was only two.† So early as the 26th of April, 1850, above thirty of these terns were seen on the Grey Stones, coast of Wicklow.‡ In the preceding year, on the 6th of May, eight were observed together at the South Wall, Dublin Bay;§ and on the 8th of that month, the first birds of the season were noticed in Drogheda Bay.‖

In 1836, one of these birds was shot at the island of Lambay, on the 9th of June, and three at Portmarnock on the 19th of July;—when proceeding from Malahide to the former locality, on the 5th of June, 1838, I saw four of the *S. minuta* in company flying over the sea. About the year 1840, from sixty to a hundred little terns have been seen during a forenoon on the coast between Malahide and Portrane, where they had nests on the sand and shingle, several of which, containing eggs, have been discovered without much search being made. They have greatly decreased there since that period.¶

The little tern was not observed on any of the rocky marine islets frequented by the larger species, that I have visited; nor am I aware of any fresh-water breeding-haunt in Ireland. Its appearance at least, inland, is thus noticed by the Rev. Mr. Lubbock, in his 'Fauna of Norfolk:'—"The lesser terns are very engaging little birds: in the summer-time they will fly backward and forward over a boat moored for angling. I have often been attended by them at Hickling and Horsey. They approach within a very few yards, and are highly delighted with a very small fish—on one or two occasions, when I had minnows with me, they came close to the boat to take them. All these birds [the various species of tern] are now with us hardly to be called more than visitants; their nesting-places have been broken up the incursions of man" (p. 122).

This bird may be considered equally common in Ireland as in

* Mr. Wm. Crawford. † Mr. Poole. ‡ Mr. J. Watters.
§ Mr. R. Ball. ‖ Mr. R. J. Montgomery. ¶ Mr. T. W. Warren.

England or Scotland. Aberdeen is the most northern breeding-haunt in Great Britain, named in the works of Macgillivray and Jardine; but in a more recent publication the species is said to remain in the Orkneys from May until August, and hence we may presume, to increase its numbers there.* Its not being found in the western hemisphere renders the west of Ireland, within its latitude, the extreme western limit of distribution.

On the 13th of July, 1841, the little tern came under my notice on the Lake of Constance, and soon after leaving Basle, a few days afterwards, when I was proceeding down the Rhine, numbers of this species and the common tern were seen about the river in the very extensive, marshy, and wild sandy tracts bordering which, doubtless, they both bred.

THE BLACK TERN.

Sterna nigra, Briss.
,, *fissipes*, Linn.

Is of occasional occurrence, chiefly in autumn, when immature.

I SHALL notice this species according to dates, instead of localities. It was first recorded as Irish in the Zoological Proceedings for 1834 (p. 31), from information supplied to me by Mr. R. Ball, who, in the month of July, for several successive years long before that time,† had observed a number of them to frequent a lake at Roxborough, near Middleton, county Cork.‡ The late Mr. John Montgomery, of Locust Lodge, Belfast, saw one of these birds in the outer bay of Dundrum (county Down) at the latter end of July or beginning of August 1821; and, on mentioning the circumstance to me, added, that he had seen a pre-

* 'Hist. Nat. Orcad.' p. 90 (1848).

† About 1819, since which period he has not visited the locality.

‡ Mr. Yarrell, merely quoting this, remarks, that "the black tern is a summer visitor to the different parts of Ireland" (vol. iii. p. 414); which implies too much.

served specimen which had been killed in Belfast Bay some years before that time. Another, respecting which no precise date can be given, was subsequently observed there at the indentation of the coast, called Adams' Bay. One shot either on the quay or Long Bridge of Belfast, on the 28th October, 1831, came under my examination: it was a young bird of the year, as was another that I saw, which had been killed about the river Lagan at Lisburn, on the 4th or 5th of the same month.

A bird of this species is stated to have been obtained at Waterford in the year 1831.* In the middle of May, 1835, a tern, shot at Clontarf, Dublin Bay (where three more were seen at the same time), came under the notice of a friend, who described it to me as "of a slate-colour, darkening to the head, which is black, as are the bill and feet: it is 10 inches long, and 23 inches in expanse of wings."† This is the description of an adult bird. A tern, described as "black," was once observed near Bonmahon, county of Waterford. In the possession of Mr. H. H. Dombrain, I have seen a specimen of the *Sterna nigra* that was shot from a boat in which this gentleman was, at the mouth of the Liffey, on September 2nd, 1837; another was obtained at the same time. (Its length to centre of tail is $9\frac{1}{4}$ inches; wing from carpus 7 inches 11 lines; bill above 1 inch; tarsus 7 lines; middle toe and nail measured in a straight line $10\frac{1}{2}$ lines; tail forked for 7 lines; forehead white, occiput and nape black; bill black; legs and feet dusky.) One of these birds was shot in the autumn of 1841 at Ringsend, Dublin Bay.‡ Mr. R. Chute procured for his collection a black tern in full adult plumage, which was killed when flying over a small lake in Kerry in the summer of 1841 (?); and about the 1st of September, 1844, he shot an immature bird as it was on wing above the lake at Castlegregory, in the same county. A young bird, obtained at Lusk, county of Dublin, on the 21st of September, 1846, has come under my inspection in Mr. Watters' collection; in which there are two other immature birds obtained near Dublin, and an adult, shot in the summer of 1847, inland, in the county of Kerry.

* Dr. Burkitt. † Mr. R. Ball. ‡ Mr. T. W. Warren, Nov. 1841.

On the 5th of November, 1849, a tern of this species was shot by Dr. C. Farran at a pool of brackish water near the sea, and adjacent to his residence at Clonea, county Waterford. That gentleman, first attracted by the extreme elegance of its flight, remarked that the bird was different from any tern he had ever seen, and went for his gun to shoot it. Unfortunately for itself, it waited his return, and exhibited no alarm at his near approach. He observed that, instead of plunging into the water after its prey like other terns, it appeared to alight with its feet on the surface of the water, and pick up food there in the manner of the kittiwake-gull. Its stomach was found to contain the remains of water-beetles and larvæ. The specimen, when mounted, was kindly forwarded to Belfast for my examination. It was a very fine and perfect example of the young bird of the year, and exhibited a grey marking of an oval form, extending for an inch in length on each side of the breast, unnoticed in the description of Yarrell, but included in that of Temminck. A bird in similar plumage was obtained still later in the year—about a week before Christmas 1849—at a marsh within half a mile of Cork. It came into the possession of Dr. Harvey, of that city. The species had previously been noticed once or twice in Cork harbour.* The black tern is said to have been observed in the bays of Dundalk and Drogheda.†

This species, though very much scarcer in England than formerly, is more frequently met with there than in Ireland;—in Scotland, strange to say, it has never been seen, at least until the year 1846; the date of publication of Macgillivray's 'Manual.'

On the 2nd of June, 1826, I observed numbers of black terns about the fens of Holland, between Utrecht and Breda, and much admired their gracefully buoyant flight, and, when in pursuit of insect prey, their most rapid evolutions.

* Mr. Wm. Crawford. † Communicated to Mr. R. J. Montgomery.

THE WHITE-WINGED BLACK TERN.

Sterna leucoptera, Meissner and Schinz.

Has twice been obtained.

An adult specimen preserved in the museum of the Dublin Natural History Society, was described by Mr. M'Coy, in the 'Annals of Natural History,' vol. xv. p. 271. It was there stated to have been shot on the Shannon, by John Hill, Esq.; but this gentleman mentioned, in a letter addressed to the editor of 'Saunders's Newsletter' (April 14, 1847), that he killed the bird on the river Liffey, near the Pigeon-house Fort, Dublin Bay; —in Oct. 1841. This was the first individual recorded as occurring in the British Islands. I have seen a second specimen of this handsome but singularly-coloured tern, which is believed to have been obtained in Dublin Bay, by the late Mr. Massey, of the Pigeon-house Fort there. The birds of his collection were almost wholly killed by himself in that bay, and, after his decease, the one in question came, along with others, into Mr. Watters's possession.

The *Sterna leucoptera* is a regular summer visitant to southern Europe, inclusive of Switzerland and the south of France, and occasionally appears in more northern countries, having even been met with in Scandinavia. Mr. Yarrell, in 1845, remarked that it had not been found in the north of France. In the scientific journal termed 'L'Institut' of the following year, however (1846, No. 658, p. 273), it was announced as having been procured there, but no locality or date was named. In the same paragraph it was said that an adult male in perfect summer plumage was shot on the 20th May, 1843, in the marshes of "d'Herinnes, sur les bords de l'Escaut, en aval de Tournay," in Belgium. It ranges westward in the Mediterranean to Gibraltar, and inhabits northern Africa.

THE NODDY.

Sterna stolida, Linn.*

Has been procured on the coast on one occasion,

As recorded by me in the following words:—"In March 1833, when looking over the collection of Irish birds belonging to Thomas W. Warren, Esq., of Dublin, I perceived, to my surprise, amongst them a specimen of the *Sterna stolida*. On being informed that this bird had been received as Irish from William Massey, Esq., of the Pigeon-house, and that his collection contained a second specimen, I waited on this gentleman to make inquiry respecting them. In May 1834 he informed me, that in the summer about four years previously, he was favoured with the two birds in question, by the captain of a vessel, who stated that they had been shot in his presence a few days before, between the Tusker Lighthouse, off the coast of Wexford, and Dublin Bay. That only a few days had elapsed since these birds were killed was apparent, not only to Mr. Massey himself (who, from occasionally preserving birds for his own collection, is conversant with such subjects), but to Mr. Glennon, the bird-preserver, by whom they were set up. Their having been skinned by an unskilful person, who left some of the flesh adhering to the skin without applying any preservative to it, proved their comparatively recent state to more than one sense.

"The history of these birds, as just given, was related to me when I first saw them; but I did not feel myself warranted in bringing it forward, without having the direct testimony of Mr. Massey. Both specimens are in mature plumage. This is, I believe, the first record of the occurrence of the *S. stolida* in Europe."

The preceding note was communicated to the Linnean Society of London, in June 1834, and soon afterwards published. Since that period, this bird has been mentioned by Temminck, in the

* Genus *Anous*, Leach; *Megalopterus*, Boie.

fourth part of his 'Manuel,' p. 461—which appeared in 1840—as met with on the coast of France; but whether on the Mediterranean or Atlantic coast is not stated.

A second record of the occurrence of this species in the British Seas, appears, in a letter from Mr. Austin, in the ninth volume of the 'Annals of Natural History,' p. 435, dated Bristol, June 4, 1842. The *Sterna stolida* is there mentioned as "a summer visitor to St. George's Channel," and it is remarked that "the flight of the noddy is extremely rapid, and it is so exceedingly shy, that I could never get a shot at one, though watching many times for a 'chance.' As I have never observed this bird on the main shore, which it seldom, if ever, approaches, it probably retires, after feeding, to some insulated rock to repose itself, without fear of interruption. It appears a solitary bird, never assembling in flocks like the *S. hirundo*, but singly seeks its food at some distance from land, though it occasionally pursues its prey into the estuaries of the larger Irish rivers, or along the outer shores of the coast."

Audubon, in the fifth volume of his 'Ornithological Biography,' gives a most interesting account of this species as an American bird. It is copied in Yarrell's 'History of British Birds' (vol. iii.), where the best information from other works is also included.

SABINE'S GULL.

Fork-tailed Gull.

Larus Sabini, Sabine.*

Young birds of the year have, in a very few instances, been met with in autumn.

I FIRST noticed its occurrence in Ireland, before the Linnean Society, on the 15th of April, 1834, and a brief abstract of the communication was then published in the 'London and Edinburgh

* See p. 314 of this volume.

Philosophical Magazine,' vol. v. p. 299. The 'Magazine of Zoology and Botany' (vol. i. p. 460) contained a full notice of the first two birds; and all additional information procured down to 1838 was brought together and published in the sixth part of the second series of Jardine and Selby's 'Illustrations of Ornithology.' The whole matter may be repeated here. The following was read before the Linnean Society, on the 15th of April, 1834:—"On the present occasion I have not only the high satisfaction of enriching the British Fauna, by adding to it the beautiful *Larus Sabini*, so lately discovered, but of describing the species in the plumage of the first year, in which attire it has never before come under the inspection of the ornithologist. The bird now exhibited was shot in Belfast Bay, on the 18th of September, 1822, by the late John Montgomery, Esq., of Locust Lodge, who carefully preserved it, under the impression that it was an individual of the closely-allied species *Larus minutus*, by which name it was distinguished, when presented in April 1833 to the Natural History Society of Belfast. Mr. Montgomery informed me, that from the diminutive size, &c., of this bird when first seen by him, he had no doubt of its rarity. It was so unwary as to alight once or twice within twenty yards of him; but, to avoid disfiguring it, he fired from so great a distance, that it was only at the third shot eventually obtained. That the species is regardless of the report of a gun, was witnessed by Captain Sabine, in its breeding-haunts within the arctic circle, as he states, that 'when one bird of a pair was killed, its mate, though frequently fired at, continued on wing close to the spot where it lay.'

"Although the *Larus Sabini* closely approximates the *Larus minutus* in general appearance, the plumage of the first year, as well as that of maturity, being very similar in both species, the superior size of the *L. Sabini*, its tail being forked to the depth of an inch, and the comparatively greater length of its tibia and tarsus, may always (even in a preserved state) afford sufficient specific distinction. In the form of the tail, the *L. Sabini* approaches the typical species of *Sterna* more nearly than its congener, the *L. minutus*. The latter, however, resembles that

genus more in the form of the bill, and in the dimensions of the tarsus and tibia.

"In this specimen of the *L. Sabini*, in the autumnal plumage of the first year, the forehead, space immediately above the eye, and between it and the bill (with the exception of the narrow line of greyish-black closely encircling the front and lower part of the eye), upper part of the throat, and sides of the neck, are white; crown, nape, and back of the neck, blackish-grey; back, scapulars, greater and lesser wing-coverts, blackish-grey, tinged with yellowish-brown, the extremity of every feather varying from greyish-white to white, as it approaches the tail; under part of the throat and upper part of the breast, pale ash-colour; lower breast and all the under plumage, white; shafts of the first six primaries brownish-black at base, becoming gradually darker towards the extremity, where they are black in the first three, but in the fourth, fifth, and sixth, they assimilate in colour to the feather at that part, which is white; the entire of the outer webs of the first five, black; the inner webs, with a broad edging of white to within from one to two inches of the end, which part is black in the first three, but tipped with white in the fourth and fifth; in the sixth the inner web is white, the outer black, excepting for three or four lines from the tip, where it is white, and again, at about an inch from the end, where a white spot of an oval shape appears.* Feathers of the tail twelve in number, white, with black tips; in the two shortest the latter colour extends upwards of an inch from the end, in the outer web especially; of the other feathers, the black prevails in a less degree as they increase in length; upper and under tail-coverts white.

	in.	lin.
"Length (total)	12	0
,, of tail	4	9
,, of wing from carpus to end of first quill	10	0
,, of bill from forehead to point	0	10
,, of bill from rictus to point	1	5
,, of tibia bare of feathers from the tarsal joint for	0	9
,, of tarsus	1	4
,, of middle toe and nail	1	$1\frac{1}{2}$
,, of outer toe and nail	1	1
,, of inner toe and nail	0	$9\frac{1}{2}$
,, of hinder toe† and nail	0	2
Depth of fork of tail	1	0"

[*March* 1838.—Having just seen the notes of the late Mr. Montgomery on this

* This marking of the sixth primary is just the opposite of that observed by Mr. Sabine in some mature specimens, in which its prevailing colour was white, "with sometimes a black spot near the end." Dr. Richardson has remarked, in the 'Fauna Bor.-Amer.,' that this primary is subject to variation.

† This is placed so high that the point of the nail does not reach within $1\frac{1}{2}$ line of the ground.

individual, I am enabled to add the recent colour of the bill, legs, &c., which in the immature bird has not been described. Under the name of *Larus minutus*, which that gentleman considered it to be, he remarked;—"irides dark; bill dark; legs pale flesh-colour; weight 5½ oz."]

"In the museum of the Royal Dublin Society, I lately observed, without having any label attached to it, a second specimen of *Larus Sabini*. Upon inquiry from Mr. Wall, the very obliging curator (who treasured the bird as a rarity, though he had not ascertained its species,) I learned that it had been shot by himself in Dublin Bay, near Kingstown, a few years before, but he could not recollect at what season. The stage of plumage, however, affords sufficient evidence of its having been killed in autumn, as it is a bird of the first year, and similar in appearance to the specimen in the Belfast Museum.

"The occurrence of only two individuals of this species within the eastern hemisphere, has hitherto been recorded, both of which were obtained by Captain Sabine at Spitzbergen."—*Read before Linnean Society, April* 5, 1834, *and published in full in Mag. Zool. and Bot.*, vol. i. pp. 460, 462.

"A third specimen of the *Larus Sabini* occurred last autumn in Ireland. It was shot on or about September 15, 1834, on the shore of Belfast Bay, near Claremont, the residence of Mrs. Clewlow, in whose possession it now is.* It is a young bird of the year, and in plumage similar to the other two individuals of this species, which I had the satisfaction of announcing to the Linnean Society, last year, as having been obtained in Ireland."† "The dimensions of this bird, taken in the same manner, and compared with those of the individual above described, exhibit but one difference at all worthy of notice; its first quill being longer than the second, though the second slightly exceeds the first, in the latter specimen."—*Mag. Zool. and Bot.* vol. i. p. 464.

"I have to record the occurrence of a fourth *L. Sabini* in

* Subsequently bequeathed, as part of that lady's collection of natural history, to the Belfast Museum.

† Proceedings of Zoological Society of London, 1835, p. 83.

Ireland. It was shot in company with terns (*Sternæ*) in the Bay of Dublin, on the 12th of September, 1837, and came into the possession of H. H. Dombrain, Esq., of that city. This gentleman has kindly informed me that the specimen corresponds with my description of the *L. Sabini* in the plumage of the first year (Mag. Zool. and Bot. vol. i. p. 460) in every respect but one, that of having 'the under part of the throat and upper part of the breast' white, instead of 'pale ash-colour,' as in the first bird described.

"The seasons of the occurrence of *L. Sabini* in Ireland approximate very closely, though the birds were all obtained in different years. In Belfast Bay, they were shot on the 15th and 18th of September, and in Dublin Bay on the 12th of the same month. The date when the first specimen was procured at the latter locality is unknown."—*Ann. Nat. Hist.* vol. i. p. 158.

"*Dec.* 1838.—The four individuals above noticed are all which have yet been positively recorded as obtained on the British shores.

"In the Appendix to Ross's Second Voyage, p. xxxvii., it is remarked, under the head of *Larus Sabini*—'I have lately heard that it has also been found on the west coast of Ireland.' By Capt. James C. Ross, the author of the zoological portion of the volume, I have been told that this information was derived from the late Joseph Sabine, Esq. The article on *L. Sabini* was written by Capt. Ross early in 1834, in the month of April in which year I first announced the species as having been obtained in Ireland. Mr. Sabine was present when the communication was read to the Linnean Society, and, in expressing his gratification to me on the addition of the species (of which he was the original describer) to the British Fauna, said nothing of its occurrence on any part of the British shores being known to him. From his remarks, indeed, I am certain that he was not at that time aware of any British specimens, and as he did not subsequently record any fact of the kind, I am induced to believe that it was merely the individuals announced to the Linnean Society that were alluded to, with the error of the "west" being substituted for the

east coast of Ireland." — *Jardine and Selby's Illust. Ornithol.*, No. VI. 1839.

This brings down the various communications which I made on Sabine's gull until December 1838, since which period (now August 1850) no further information has been acquired respecting it as a visitant to the coast of Ireland.

Subsequently, this species has been noticed on the English and continental coasts. In the 3rd vol. of Yarrell's 'British Birds' one of these birds is mentioned as having been killed at Milford Haven in the autumn of 1839, and a second is stated to have been obtained in Cambridgeshire. These two only were noticed in Great Britain down to 1845, the date of publication of the 2nd edition of that work. Temminck, in the 4th part of his 'Manuel,' published in 1840 (p. 489), notes a *Larus Sabini* having been procured near Rouen; one (a young bird) on the coast of Holland; and one on the Rhine. M. Degland, writing in 1849, adds another continental specimen, killed at Dunkirk in 1847.*

This bird, in full adult black-headed plumage, was first met with and killed by Captain Sabine, R.A., in July 1818, on low rocky islands off the west coast of Greenland. It was described and named after him by his brother, Joseph Sabine, Esq., in the 12th vol. of the Linnean Transactions.†

* 'Ornith. Europ.' vol. ii. p. 332.

† Ross's Gull, *Larus Rossii*, Rich., is stated by Professor Macgillivray to have "once occurred in Ireland" ('Man. Brit. Birds,' vol. ii. p. 254); but no authority is given for the statement. I wrote to that gentleman on the subject, but he could not recollect the source of his information. The species cannot, therefore, have a place in the present work, though it is not improbable that it may be added to the Irish catalogue at a future period.

The first individual of Ross's Gull authentically recorded as British was killed by Lord Howden's gamekeeper in February 1847, in a ploughed field in the parish of Kirby, near Tadcaster. Its occurrence was noticed by Mr. Charlesworth in the Proceedings of the Yorkshire Philos. Soc., and copied at length in the 'Zoologist,' vol. v. p. 1782.

THE LITTLE GULL.

Larus minutus, Pall.

Is extremely rare.

On the 5th of August, 1840, I saw in the museum of the Dublin Natural History Society a beautiful adult specimen of this bird (the first in this plumage known to have occured in the British Islands) which had been shot by Walter Boyd, Esq., of the 97th Regiment, in the month of May of that year, between Shannon Harbour and Shannon Bridge, on the river of the same name. There was a pair of them; the other proved wild after its companion had been killed: they were in company with the common black-headed gull (*L. ridibundus*).*

A beautiful adult little gull was shot in the estuary about three miles distant from Belfast, on the 23rd of December, 1847. It came under my examination within an hour after being killed, when the following description was drawn up:—

	in.	lin.
Length (total) from point of bill to end of tail . . .	10	6
„ of bill above	0	11
„ „ to rictus	1	6
„ of wing from carpus	9	2
„ of tarsus	1	0
„ of middle toe exclusive of nail	1	0

"Forehead, cheeks, and a [small] space behind the eyes pure white" (Jenyns, p. 271). All the under plumage of a beautiful roseate tint; a spot at the anterior angle of the eye black; occiput, nape, and ear-coverts dark-grey of different shades, darkest or blackish-grey on ear-coverts; upper part of the body and wings pale bluish-ash; plumes beautifully firm in tex-

* In an article on Gulls, published in the 'Irish Penny Journal' for Sept. 26, 1840, and signed "J. E. P." (Capt. Portlock), this little gull was mentioned. Mr. H. H. Dombrain, in 'Saunders's Newsletter' of December 4, 1840, alluded to his having noticed the occurrence of the bird previous to Capt. Portlock, but without stating where.

ture, so as to exhibit a uniform mass of one tint; primaries and secondaries "broadly tipped with white; inside of wings deep blackish-grey;" tail pure white; bill black; inside mouth dull orange; irides black with brownish tinge; tarsi, toes, and webs of feet, both on upper and under side, of the same uniform hue of pale salmon-colour. Its weight rather exceeded $3\frac{1}{2}$ oz. It proved to be a male on dissection. Its stomach contained the remains of crustacea, and two of the *Rissoa ulvæ*.

This gull was preserved by Mr. Darragh, the curator of the Belfast Museum, who possesses a critical knowledge of our native birds generally, and who, when visiting Strangford Lough in January 1848, a few weeks after having set up the specimen, saw another of them, both on the 18th and 19th of that month, at Rough Island. It was also adult, as denoted by its pure white tail. The diminutive size of the bird first attracted his attention, and he had the advantage of seeing it very near both on wing and on the ground. The dark colour of the under side of the wings was conspicuous; the tail was square at the end (not cuneate as in *L. Rossii*,* nor forked as in *L. Sabini*). The upper surface of the wing, including the primaries, was particularly remarked to be wholly of a light colour. My informant's fear of injuring the bird as a specimen with the large shot in his gun prevented him from firing at it when seen the first day; on the second day, he had crept for a long way—after the manner of the deer-stalker, as so graphically described by Mr. Scrope—and though enabled to observe it attentively for some time from behind stones on the beach, distant only about fifteen or twenty paces from the wished-for victim, he could not bring his gun to bear upon without alarming it. In his attempt to shoot it, the bird took wing; but the rough nature of the ground prevented his steadying himself so as to get even a parting shot at it.

I have no doubt of the occurrence of another bird of this species near Kirkcubbin, Strangford Lough. About the beginning

* This species is noticed under the supposition that it may in winter lose the black collar, which would otherwise distinguish it.

of February 1849, Mr. F. Rankin wounded a gull there very much smaller than the *L. ridibundus*, and had it running about his garden for some days, when it disappeared, he knew not how. On seeing the preserved specimen of the adult little gull in winter plumage in the Belfast Museum, he at once pronounced it to be of the same species.

In November 1848, another little gull in adult plumage was shot in Belfast Bay, but unfortunately was lost as a specimen.

Two instances of this bird's occurrence in Scotland (Jardine), and several of its having been procured on various parts of the coast of England, are on record.* It appears to have been occasionally met with in most of the countries of Europe, but properly belongs to the more eastern portion of the continent. Dr. Richardson mentions one instance of its having been obtained in North America.

THE BONAPARTIAN GULL.

Larus Bonapartii, Rich. and Swains.

Has been once procured,

Under the circumstances which have been fully detailed in the 'Annals of Natural History' for 1848 (vol. i. p. 192, new series). They are as follows :—"A specimen of this beautiful little gull—the first known to have visited Europe—was killed at the tidal portion of the river Lagan, between Ormeau Bridge and the Botanic Garden, about a mile above the lowest bridge at the town of Belfast, on the 1st of February, 1848. It was flying singly. The person who shot the bird, attracted by its pretty appearance merely, left it to be preserved with a taxidermist, who, on receipt of any birds either rare or unknown to him, kindly brings them for my inspection. I had thus fortunately an opportunity of examining the bird previous to its being skinned, when

* Mr. Macgillivray incorrectly mentions the individuals procured in Ireland as having been "immature."—'Man. Brit. Birds,' vol. ii. p. 242.

all the following measurements, &c., were made. This was not, however, until the morning of the 5th of February, when the irides had faded so, that the colour could not be accurately noted.

	in.	lin.
"Length (total)	13	9*
„ of bill from forehead	1	1
„ „ to rictus	1	9
„ of wing from carpal joint to end of primaries	10	4
„ of tarsus	1	$4\frac{1}{2}$
„ of middle toe	1	$2\frac{1}{2}$
„ of middle toe-nail	0	$2\frac{1}{2}$
„ of outer toe	1	$1\frac{1}{2}$
„ of outer toe-nail	0	2
„ of inner toe	0	11
„ of inner toe-nail	0	2
„ of hind toe	0	2
„ of hind toe-nail	0	1
Tibia bare of feathers from tarsal joint	0	6
Wings pass the tail	1	9†

"*Bill* in form as described by Richardson, excepting that at the base its depth exceeds its breadth. At the base of the upper mandible where the plumage ends, it is $2\frac{1}{2}$ lines in breadth, whereas the depth at the same place is $3\frac{1}{2}$ lines. In colour it is black; paler at the base beneath. Tarsi, toes, and webs of feet of a uniform pale flesh-colour, as the 'legs' of the young male are described to be in the 'Faun. Bor.-Amer.' These are stated to be 'carmine-red' in the adult. (In the specimen under examination they are just the colour that I have remarked those of the nestling *Larus ridibundus* to be, and which it retains through the following autumn and winter; the adult of this species having these parts of an arterial blood-red.) The claws are partly blackish and dark brown. Inside of the mouth pale reddish flesh-

"* As measured by applying a piece of twine so as to touch each portion of the bird, in a straight line, from the point of the bill to the end of the tail. The bird being laid on a flat surface, the space which it occupied from the point of the bill to the end of the tail was 12 inches 6 lines. The length of three specimens given in the 'Faun. Bor.-Amer.' was from 15 in. to 15 in. 6 lines. Looking to that work after my measurement was made, and too late for correction (the bird being skinned), I found that the neck is stretched when the length is taken, whereas in this and every similar case, I have been particular that it should never be in the least stretched, but placed as it were in repose. Audubon describes the adult male as $14\frac{1}{5}$ inches, and the 'young in December as $13\frac{2}{3}$ inches.'

"† The figure of the adult bird in the 'Faun. Bor.-Amer.' does not sufficiently exhibit the length of wings:—they are described in that work as passing the tail two inches.

colour:—described to be carmine in the adult. The tail may be termed even at the end, 'very slightly rounded laterally.' The beautiful long tern-like wings were to me the most striking character at the first glance, and indicated what was afterwards found had been remarked by Audubon, viz. that—'the flight of this gull is light, elevated, and rapid, resembling in buoyancy that of some of our terns, more than that of most of our gulls, which move their wings more sedately.'

"*Plumage*. Head white, excepting the usual blackish seasonal ear-spot of *Xema*; a little of this colour before the lower portion of, and beneath the eye, and a little above it posteriorly—also blackish mixed with white on the nape. Thence to the back very pale pearl-grey; back or mantle ('mantean,' Temm.) pearl or pale bluish-grey. Tail pure white, except from about a line inwards from the tip, where a band of black nearly an inch in breadth appears. The wings exhibit generally the bluish-grey of maturity, but have 'clove-brown markings on the bastard wing, lesser coverts, and scapulars; anterior border of the wing white from its shoulder for the breadth of four great primary coverts.' *Primaries* exhibiting *in degree* considerably more black than the specimen described in 'Faun. Bor.-Amer.'—outer margin of the first entirely black; of the second, from tip upwards for $5\frac{1}{4}$ inches black, thence white; of the third, from the tip upwards black for 4 inches next the shaft, for $3\frac{1}{4}$ inches on outer margin.* Remainder of the primaries terminated with brownish-black, except at the extreme tip. On the third, the first indication of white appears in a mere line of that colour, thence it becomes gradually larger in size and deeper in shade to the seventh, where it assumes the pearl-grey of the lower portion of the same feather. The black becomes more and more tinged with brown from the first primary to the last; the light-coloured tip on the contrary becomes gradually of a deeper shade from the third to the last.

"Shafts of all the primaries white, except the upper portion of the first, which is dusky. Black appears on the inner web of the three longest primaries, much lessening both in length and breadth from the first to the third; in the first it occupies four inches in length, and its greatest breadth from the shaft is 4 lines ($\frac{1}{3}$ inch).

"The secondaries exhibit a large space of blackish-brown towards the tip within their pearl-grey margins; the tertiaries have more or less of blackish-brown irregularly disposed towards their tips.

"Under surface of wings entirely white, except that the portions of the primaries, secondaries, and tertiaries, which are dark above, appear greyish. Entire under surface of body from the bill to the extremity of the under tail-coverts white, of an extremely faint roseate hue. The bird would, I consider, have attained full plumage at the next moult. The weight was $5\frac{1}{4}$ ounces. It proved a male on dissection. The stomach contained the remains of two specimens of opossum shrimp (*Mysis*), a little vegetable matter, and some small pebbles.

"* Dr. Richardson remarks that,—'the extent of black on the ends increases gradually from the first to the fourth, on which it measures above an inch, diminishing again in the following ones.' In my specimen, the extent of black increases gradually only to the third, in which it is $1\frac{1}{3}$ inch in depth, and diminishes in the succeeding feathers.

"The species was first distinctly characterized in the 'Fauna Boreali-Americana,' of Richardson and Swainson, in 1831. It is mentioned in that work (p. 425) as 'common in all parts of the fur countries, where it associates with the terns, and is distinguished by its peculiar shrill and plaintive cry.' Mr. Audubon ('Orn. Biog.' vol. iv. p. 212, 1838) informs us, that he first met with this bird in August, when crossing the Ohio at Cincinnati, and subsequently shot a specimen in November, on the Mississippi, a few miles below the mouth of the Arkansas. In Chesapeake Bay after the first of April, and at the harbour of Passamoudy (Maine) in May, he saw them in great abundance:—at the latter place his son killed seventeen at one discharge of his double-barreled gun. It is added that 'none of them were observed on any part of the Gulf of St. Lawrence, or on the coast of Labrador or Newfoundland, and that in winter this species is common in the harbour of Charleston, but none are seen at that season near the mouths of the Mississippi.' This author subsequently 'found in London a pair of these birds * * * which had been brought from Greenland.'

"The occurrence of this North American bird in Europe affords another opportunity for speculating whether birds can really cross the Atlantic, which some of the best ornithologists in Europe did not, at least a few years ago, believe to be possible. In my opinion, as fully stated on former occasions when noticing the occurrence of American birds in Ireland, the presumptive or circumstantial evidence is all in favour of their having really crossed the ocean.*

"In the estuary, about three miles from where the *Larus Bonapartii* was shot, the first individual also of

Larus Sabini,

known to visit the European coasts, was met with; and at the opposite side of the bay a second example was afterwards ob-

"* See Yellow-billed American Cuckoo (*Coccyzus Americanus*) in 'Annals,' vol. ix. p. 226, and American Bittern (*Botaurus lentiginosus*) in same work, vol. xvii. p. 94.—[In Vols. I. and II. 'Nat. Hist. Ireland.']

tained. Since I first noticed the species, a few individuals have been procured on the shores of continental Europe. A very rare gull, closely allied to the preceding, may also be noticed, although it is not, strictly speaking, American, nor has it been obtained there in any but a single instance* :—I allude to the

Larus minutus,

a beautiful adult example of which, shot in the estuary, about three miles from Belfast, on the 23rd of December, 1847, came under my examination within an hour after being killed.

"We cannot think of the occurrence of the three preceding species of *Xema* or black-headed gulls within so limited an area, without reflecting that many species of birds of which we are now ignorant, may visit the British coasts. If in the estuary at Belfast, on the eastern coast of Ireland, North American species are thus met with, how much more likely are they to visit, unnoticed by any one, the western and northern coasts of the island, as well as those of Scotland!

"Of the other *Xemæ*, known as British, *X. ridibundus* and *X. capistratus* (regarded by me as one species†) are common in the locality indicated for the others‡; the remaining one, *X. atricilla*, has been observed on two occasions on the south coast of England, and by Montagu only. Of the two‖ additional European species, *X. melanocephalum* and *X. ichthyaëtum*, the former inhabits 'southern,' the latter 'south-eastern' Europe. *Xema Franklini* is now the only North American species which has not been obtained in Europe."

"* 'Faun. Bor. Amer.' p. 426. The species is not included in the Prince of Canino's subsequently published list of North American Birds.

"† See Zool. Proceedings, 1845;—copied into the 'Annals,' vol. xvi. p. 357, and Yarrell's 'Brit. Birds,' 2nd edit., preface, p. xi. In the three works, the last word of the foot-note is printed 'hood' instead of *head*.

"‡ The species of *Larus* (as distinguished from *Xema*) frequenting Belfast Bay are *L. marinus*, *L. fuscus*, *L. argentatus*, *L. canus*, *L. tridactylus*, and *L. Islandicus*; all of which are common but the last: it was once obtained. Specimens of these, as well as of the *Xemæ* noticed from the same locality, are preserved in the Belfast Museum. [One individual of the *L. glaucus* has since been procured.]

"‖ *X. plumiceps*, Bonap., is not enumerated in the 'Wirbelthiere Europa's,' or 'Rev. Crit. des Oiseaux d'Europe' (Schlegel)."

THE BLACK-HEADED GULL.

Red-legged Gull.*

Larus ridibundus, Linn.

Is common and resident.

This is *the* common gull of Belfast Bay, and of the oozy or sandy estuaries and marine loughs of at least the northern half of Ireland. Great numbers may be seen frequenting such localities daily throughout the year, excepting at the period of the breeding season.

From the circumstance of this species breeding inland, and its eggs and young being in request for the table in the good old times, we have had more ample information respecting its economy at an early period than of any other of its tribe. In Plot's 'Natural History of Staffordshire' (1686), there is a very full account of this bird given, which has been often copied,† or the substance of it published in a condensed form (by Bewick, &c.). Sheppard and Whitear particularly notice a breeding-haunt in Norfolk, in their memoir on the birds of that county, published in the Linnean Transactions (vol. xv. p. 52).‡ The Bishop of Norwich, in his 'Familiar History of Birds' (vol. ii. p. 246), introduces an ample description of a great breeding-place at the present time in the same county.

Breeding-haunts.—This gull breeds throughout Ireland in similar localities to those described in the works referred to. On the 27th of June, 1832, when at Portlough, near Dunfanaghy, in the north-west of Donegal, covering perhaps a hundred acres, I went in a *corragh* to a little islet about fifty or sixty yards from the shore, on which black-headed gulls were breeding, and found their nests and eggs: the nests were formed negligently of reeds

* *Pirre* and *Pirre-maw* are sometimes applied to it on the Antrim coast.

† See Stanley's 'Familiar History of Birds;' Garner's 'Nat. Hist. of Staffordshire' (1844), &c.

‡ This is copied *verbatim* by Yarrell.

(*Arundo phragmites*), and tolerably well concealed by herbage. A man living on the banks of the lake stated, that these birds had been regularly in the habit of breeding there until three or four years previous to that time, when a boat was placed permanently on the lough, in consequence of which they abandoned it until the present year (1832), when the boat is much the same as being away—lying at the edge, a wreck. It is said that they made their first appearance at Portlough for the season about three weeks ago, and that when the young birds are "out," the parents may be almost constantly seen flying to Sheephaven, and returning thence, carrying sand-eels in their bills for the young.

On the 15th of June, 1833, a breeding-haunt of this species in Lough Neagh was visited by William Sinclaire, Esq., and myself. This is a narrow piece of ground, which runs out for perhaps 300 yards from the north-east of Ram's Island, with which it is connected, and is merely a bed of gravel (raised a few feet above the surface of the lake), that in the course of time has become covered with herbage—grasses, rushes, &c.—and shrubby willows of different kinds. About the roots of these, and over the whole ground, the nests of the black-headed gull were placed in such numbers, that we were obliged to be extremely cautious in looking where to set our feet in avoidance of them: our circumspection before every foot-fall, however amiable, appeared in action rather ludicrous, reminding us of the manner in which cautious ladies pause while crossing a snow-covered street. These nests contained eggs of every number up to six inclusive, though authors generally state that the bird lays only three. They differed from those of the common tern (which here, were mere hollows in the short grass, without a vestige of any extraneous matter), in being composed of dried grasses, rushes, and such other vegetable substances as were within reach; but were not regularly formed like those of the kittiwake gull at Horn Head. The eggs varied exceedingly in size, form, and colour, not two exactly alike being seen in the same nest.*

* This is more singular than the statement of Mr. Salmon in respect to this species, that each laying of eggs in the same season (amounting to three if the

There were nearly as many young birds as eggs, some of them apparently ten days old; all of these, even the youngest, when pursued, fled to the lake, which was very rough. In one nest I noticed a young bird which had just made its exit from the shell, surrounded by four eggs, but for the shelter of which—warmth it could not be called, as most of the eggs in the nests felt cool—it must have perished, so cold was the day. I was surprised to observe many young gulls lying dead, the only cause for which that could be assigned was their being killed by old birds, not their parents. Our boatman gave the species the character of being very pugnacious, and we ourselves had ocular demonstration to that effect. Not less than a thousand of these gulls appeared here at one view, and their evolutions were extremely beautiful and varied, more especially when the willows rising to the height of about fifteen feet, and forming a background, afforded a rich contrast to the elegant plumage of the birds as they gracefully poised themselves, or winnowed the air immediately above their nests; and again, when they hovered over the water and dipped their feet in the rising wave after the manner of the stormy petrel.

We were highly gratified to learn from the caretaker in charge of Ram's Island—with its two buildings of very opposite character, one of the ancient Round Towers, and a neat modern cottage—that its noble proprietor, the late Lord O'Neill, had given orders that the gulls and terns breeding there, should not in any way be disturbed, the result of which was, that they had become gradually more numerous, and were much more so that

birds be much disturbed), is smaller than the preceding (Hewitson, Eggs, &c., p. 437).

A man living on the Magharee Islands, Tralee Bay, states of the eggs of the "larger gulls" (not, of course, inclusive of *L. ridibundus*), that those of the first laying are dark and much blotched; of the second, much lighter in colour; and of the third and last, nearly white, with one or two large dark spots (Mr. R. Chute).

The following note, obtained since the preceding was printed, may be added:—*October* 1850.—Mr. John D. Ferguson, of Dunvegan Cottage, Skye, informs me that his attention was called by the lighthouse-keeper at the island of Berneray, to the eggs of the common guillemot becoming lighter in colour and smaller in size each time for several layings; a statement which my informant saw fully verified.

year than ever. One of my companions, who had been here a few years before, did not then see more than one-third of the birds which we observed. In consequence of their being protected, we can judge with certainty of the natural period of production of the young birds, and several other points which cannot be determined in localities where the eggs are, time after time in the same season, carried away. Thanks to Earl O'Neill, the beautiful *Larus ridibundus* and *Sterna hirundo* had at least one asylum of peace and safety in the north of Ireland, where they could, without dread or fear of annoyance from man, increase and multiply their species.

When at Ram's Island on the 5th of August, 1846, I was informed that owing to the breeding-ground being inundated, not a black-headed gull bred there that year. In the preceding year they were abundant; probably not less so than in 1833. On the 4th of June, 1850, this island was visited by a party of ornithologists, who did not see more than two pair of these gulls near it, and were told that hardly any had bred there during the last few years. The decrease was attributed by the boatmen partly to the frequent robbery of the eggs, and partly to the present custom of spreading the fishermen's nets over the ground where the nests were formerly placed. One nest, containing two eggs, was found on the island.*

In the last-named month, a fisherman at Toome stated that great numbers of these gulls bred on Scabby Island, Lough Beg, four or five years ago, but that none do so now.†

A former breeding-haunt of these gulls, on an island at Lough Achery, county Down, is mentioned in the second volume of this work (p. 146), in connexion with the heron, which they drove from the locality, that they might appropriate it to themselves. One shot at Lough Clay (south), in the same county, in the summer of 1845, where a pair only bred that year, came under my notice, as have single specimens obtained in the breeding-season at islands of Lough Egish and Lough-a-vane, county Monaghan. About a thousand birds, old and young together, were

* Mr. J. R. Garrett. † Ibid.

observed a few years ago about the island of a lake near Shercock, county Cavan.* On a flat island—a building-haunt—in one of the Mayo lakes, Mr. R. Ball and I saw many of them in July 1834, and that gentleman's brother, either in 1840 or 1841, reckoned about fifty pair at their breeding-islets in two other lakes of that county—Levally and Conn—but more at the former one. Both lakes were said to have been frequented by the species from time immemorial. In the evening they left these haunts in flocks, and flew to the distance of five or six miles, to feed on the moths which appeared in abundance above the meadows that had been flooded during the winter. In Loughs Mask and Corrib (Galway) this gull is said to nidify in great numbers.† Many other *fresh-water* lakes throughout the island are doubtless frequented by it for incubation;—such only have I known it resort to, in Ireland, for that purpose. On some of the low flat islands on the *sea-coast* at the mouth of the Thames, it is said to build,‡ and is described in general terms by Degland, in his 'Ornithologie Européenne,' as breeding on the borders of the sea at the embouchure of rivers (vol. ii. p. 327).

The black-headed gulls retire from most of their breeding-places so soon as the young are able to leave them, but about a great expanse of water like Lough Neagh they remain longer: at the end of September 1834, I remarked many there, and considered it not improbable that they may be permanently resident, making feeding excursions to the ploughed lands on its banks, as the species elsewhere does from the sea-shore.

Just after the breeding season numbers frequent the oozy banks of the river Lagan, over which the tide flows, where they continue through the autumn, but towards winter, move to the bay. Very early in spring they again appear far up the Lagan, which is their daily resort until breeding time arrives:—many are in the upper parts of the estuary from August until May.

* Mr. T. W. Warren. † Mr. R. J. Montgomery. ‡ Yarrell.

So late as the 31st of May and 2nd of June, 1832, I observed flocks consisting of various numbers, not exceeding thirty, about the Lagan.

On the 24th of July, 1838, I remarked many old birds accompanied by their young of that season in the bay. In 1845 they were still earlier, a flock of about thirty, old and young, being seen there on the 19th of July, and on the 24th, about twice as many. At that locality, and in the tidal portion of the river Lagan opposite the Royal Botanic Garden, they gradually increased until the 8th of August, when their numbers were complete for the autumn.

From the river Lagan they used to be wholly absent from the period of their retirement, late in the spring, until old and young returned in company. I was therefore surprised to see a flock of forty-nine fly high above the Lagan bridge early in the evening of the 15th of May, 1850, all adult birds, and followed by two or three smaller flocks proceeding seaward, in the same course, most probably to their breeding-haunt. Many adults, I was told, were daily observed in the bay from this time forward. On the 4th of June I remarked a number of old birds in a similar place in Lancashire;—the marine sands about Fleetwood: and on the 2nd of July, about forty in that state of plumage appeared in a flock at a locality of the same nature between Drogheda and Dublin. Their wandering far from breeding-haunts, in the midst of the season, would therefore seem to be not unusual, unless that such birds—like adult kittiwakes, hereafter to be mentioned—do not increase their species.

Plumage.—I shall give a selection from notes on this subject made in the vicinity of Belfast.

1832. *March 21st and 1st of April.* Out of a great number observed, not more than about one in twenty had the head black; the others had it faintly mottled, or exhibited merely the black ear-spot of winter;* the rest of the head being pure white. *April 13th.* Of two which flew within a few yards of me, both having the

* The other dark spot of winter plumage, being close to the eye, is not conspicuous like that above the ears.

black band of immaturity of equal breadth across the tail, one had the head black, and the other white. *April* 17*th*. I examined through a telescope, though they were not far distant, a number of these gulls. They differed much in plumage, some having the front of the head black, others greyish-brown, but all, in either state, having the back or hinder part of head pure white, like *L. capistratus*; more than were in either of those states had the head faintly mottled with grey and white: most of the birds in this plumage had a black band across the extremity of the tail. *May* 3*rd*. I examined most particularly, this evening for half an hour, with a telescope, a flock of about a hundred when feeding on the ooze of the river Lagan, close by the Botanic Garden. Some had the front of the head black, like those on the 17th of April; others, brown; the back or hinder part of it being white in all displaying this "masked" appearance.—Some of those having brown in front of the head, had a round white marking extending from the upper mandible. Some had the head mottled, and others pure white, excepting the black ear- and eye-spots (*i. e.*, were in winter plumage). The legs of those nearest me (about sixty yards off), which happened to be the most adult, were bright lake-red. *June* 10*th*. The only bird of a small flock of six that came near me displayed the black band of immaturity on the tail.

1839. *March* 21*st*. I was much struck with the beauty of some of these birds which were feeding very near me at the edge of the bay, and had not yet assumed the entire black head, the hinder half only being of this colour, and the anterior pure white, which appears to me more elegant than the entire black head. I have shot arctic terns in June, at their breeding-haunts, with the anterior portion of the head thus white.

1842. *March* 29*th*. I observed several of the *L. ridibundus*, with heads black as in summer, but a few which I saw in the bay, on the 12th of May, had not black heads, but, instead, a mere extension of the black ear-spot which we see in winter: this was simply extended a little on either side, terminating in a point, so as instead of a round spot to appear a narrow crescent of black.

1843. *March* 17*th*. Great numbers of these birds in the river Lagan, displaying black heads.

1845. *May* 6*th and* 7*th*. Of about a hundred and twenty seen each day in the Lagan, near the Botanic Garden, not more than one-fourth had the heads black. *May* 10*th*. Of a similar number examined at same place through a telescope, some were in adult *L. ridibundus* plumage, in hood-like form of black on head, the black in such birds being of a greatly deeper shade of colour than in other individuals which were but *masked*. Some birds had no black on head but eye-spot, and had a broad band of black on tail.

Roseate plumage.—I have had communications from various parts of Ireland, including the south, respecting rosy gulls, and specimens have occasionally been sent for my examination. They were all of this species, differing only from ordinary birds in being of a rich cream-coloured roseate hue where others are white; and most conspicuously so on the breast. Few birds from any part of the world present a more elegant appearance. The description of one will suffice.

October 15*th*, 1832. The most beautiful specimen of *L. ridibundus* that I have

seen was shot in Belfast Bay, to-day. It was an adult bird, and the primaries being tipped with white, indicated (according to Temminck) that it was a very old individual. Not only the breast and all the under plumage had a deep roseate tinge, but also the primaries, the two first of which, including the shafts of the feathers, were of a very deep pink; each succeeding primary, after these, became gradually of a paler hue: the second primary was one-third of an inch longer than the first. The bill, tarsi, and toes of this bird were of as brilliant an arterial blood-red as in the month of June.

Inland and Sea Feeding, &c.

Every month I have seen these gulls frequenting ploughed fields, which they are most partial to when the plough is at work. The following notes bear in part on this subject:—

Nov. 27, 1840.—During a ride, when the tide was beginning to ebb, I saw about 200 red-legged gulls busied feeding on the sandy beach between the road and Holywood Warren, Belfast Bay, and on my return half an hour afterwards observed that they had for this purpose kept pace with the receding tide. When the gulls are on the water here they are resting, and not feeding, this latter being performed on wing or "on their legs." There were other gulls—*L. canus* and *L. argentatus*—intermixed with them in pursuit of food. At their rocky breeding-stations, we see the last-named species at this occupation either when floating buoyantly and silently on the waves, or darting down screaming from the air to the surface, where there is "a play of fish."

This day was perfectly calm, with bright sunshine. As I have often before observed in such weather, the *L. ridibundus* was flying in numbers inland to a little distance, and feeding in the fields where the plough was at work. The compact form of this gull, both in body and wing, distinguishes it at a glance from its congeners. I particularly analyzed one of the beautiful flights of this—as of other gulls—when a large number of them appear high in the air forming a somewhat circular body, within the circumference of which they seem to be passing backwards and forwards, and in all possible ways. On this occasion about sixty were

so disporting themselves, as if in pure enjoyment of the delightful day. They seemed to feel, with Moore,

> "Blest power of sunshine, genial day,
> What balm, what life is in thy ray,
> To feel thee is such real bliss," &c.

This interesting flight was formed by the birds, singly or in pairs, circling round from all points, so as to be going in opposite directions, thereby constituting the strange diversity I had so often witnessed under similar circumstances. At such times they are perfectly silent,—never breaking the stillness of the empyrean with one discordant sound.

January 1, 1842.—I watched for a long time about sixty of these gulls "following the plough," in a field adjoining Park-mount, on the western side of the bay, where it was beautiful to observe them, their manner was so playful and full of life. They kept in a close flock generally, within ten or twelve yards of the plough in its progress, and were frequently not more than one or two yards distant from the ploughman's head. Hovering *en masse* over the newly turned-up furrows, one or several together dropped down as their prey appeared. They called all the time, though on other occasions of the kind I have particularly remarked their silence. On the 18th of the month above one hundred came under my notice in the same manner, on the county Down side of the bay. In the numerous fields already ploughed around the one in which the process was going forward, not a single gull was to be seen. They may be remarked similarly engaged about husbandmen employed in harrowing.

Farmers generally are so very unwilling to admit that any birds do them good, I quote the following with much satisfaction:—With reference to a great breeding-haunt, Scoulton Mere, in Norfolk, and known as such for above three centuries, we are told that "now and then a year of jubilee is given, and no eggs taken; this was done lately at the instance of the neighbouring farmers, who justly value the services of these birds in the destruction of grubs, &c."*

* Lubbock's 'Fauna of Norfolk,' p. 123 (1845).

The black-headed are less wild than any other species of gull in Belfast Bay, and are often to be seen feeding very near the road bounding its western side, even when the tide is out, and a great extent of banks uncovered. I have remarked them within forty yards of it, and have been occasionally much interested in observing the excellent vision they possess, as evinced by their making "stoops" from a height of ten or a dozen yards at objects on the ruffled surface of the water so minute that they could not be perceived in their bills, though they evidently never failed to seize something. When feeding on the ooze of the Lagan, I have been amused at their suddenly turning back, and using their wings for a yard or two in pursuit of prey which the stream had carried past them: their advantage over wading birds, too, is sometimes obvious, as they resort to swimming when other means will not bring them to the desired object. I have sometimes remarked that large flocks feeding here obtained their food entirely on the ooze, without approaching even the margin of the river.

As a difference of opinion exists about certain species of birds eating slugs, or shell-less snails, on the 10th of August, 1833, I tried four young black-headed gulls with different species of them; the small yellowish one (*Limax agrestis*), the young of the speckled (*L. maximus*), and the small blackish one with orange belly (*Arion hortensis*). These were offered to the gulls after their usual daily time of being fed was past, and when they were extremely vociferous for food. On the slugs being presented, they all four dashed open-billed upon them, and picked up a slug each, which was no sooner done than they one and all flung them violently away with evident disgust: some of them returned a second time to the charge, and again picked up a slug, but this was as rapidly expelled as at first: thus terminated the feast of slugs.* They were usually fed on the entrails of fowls.

With respect to the black-headed gull itself as food, a correspondent remarks, that he has found it "sufficiently palatable, and

* For ducks feeding on them, see p. 84.

though the flesh is a little coarse in texture, it is agreeable to the taste."

Under the date of November 8, 1833, I noted that the boldness and impertinence of a young black-headed gull at the Falls pond much amused me. It was one of eight nestlings brought by us from Ram's Island in June: of the others, four died within the first two or three weeks, and the remaining three (noticed in connection with the slugs) when thriving remarkably well disappeared, having been probably killed by rats or stoats. On a quantity of potatoes being thrown upon the bank of the pond for the various species of wild-fowl there, this gull, although there was abundance of food for all, drove away shelldrakes, mallards, brent-geese, &c., pecking with its bill at them whenever they approached sufficiently near, and giving utterance to its shrill jarring cry all the time. It followed the shelldrakes for some yards until it drove them furiously into the pond. Even lifting up its head from the food, and merely looking at the brent geese, but in such a manner, indeed, as to say, 'be off, or stay at your peril,' they wheeled about, and ran away. These geese are very meek and gentle in deportment, with which their half-mourning plumage well accords. It seemed to be through sheer mischief that this gull persecuted the other birds, as the potatoes were so widely spread that there was abundant room for all of them to feed at once. I have observed a black-headed gull, too, in a wild state, drive a lapwing boldly away when its feeding-ground was approached.

The examination of the stomachs of a number of these gulls at various times, and at all seasons, proved them to be almost omnivorous: some contained the remains of fish, mollusca (*Rissoa labiosa, R. ulvæ,* &c.), crustacea (such as *Idoteæ,* shrimps, &c.), earth-worms, coleopterous insects, grains of wheat (in one stomach there were fifteen perfect grains), *confervæ,* and other vegetable matter.

The preying of these gulls on moths has been alluded to in connection with their breeding-haunts in Mayo. They are commonly sought after, in the summer evenings, so late as nine o'clock,

in the counties of Roscommon and Leitrim, when flying after moths (perhaps the ghost-moth, *Hepialus humuli*) above the ripe but unmown meadows, in flocks generally of about a dozen birds. My informant is not aware of any breeding-place being near.* "The Rev. J. Dubourdieu is of opinion that the moths of the cut-worm (from his description, *Phalæna humuli*) have diminished, as he sees the gulls in the meadow before his house [in the county Down] pursuing like swallows, and catching them even until eleven o'clock at night. From a considerable distance he can hear the snap of the gull when it seizes one. At this period we may see the moths, the nights being so light as to appear twilight throughout."†

Everywhere over Ireland that I have been—in the north, east, west, and south—this gull was met with, and along the western coast as numerously as elsewhere. One of the most favourite localities I know is the inner extremity of Dundalk Bay: I have never crossed the bridge northward of the town without seeing numbers. Certainly as many, if not more, than are bred in the island remain during the winter on the sea-coast, and in the most northern estuaries.

Sir William Jardine remarks, that "the black-headed gull is at all times to be met with on the coast in the south of Scotland during winter, but in no proportion whatever to the large numbers that annually resort inland to breed" ('Brit. Birds,' vol. iv. p. 295). The marshy extremity of a mountain tarn covering a few acres on a moor, about twelve miles inland from Ballantrae, in Ayrshire, in occupation of a friend, is annually tenanted by a large colony of these birds, which look extremely beautiful in the midst of the wild heath; but so easy of access are their nests, that they are sadly pillaged of their eggs, and, as the practice of robbing them is on the increase, the poor gulls will, doubtless, be eventually banished from the district they so much adorn. On the 29th of September, 1842, I observed great numbers of these

* Mr. W. R. Wilde. † Journal of John Templeton, June 29, 1808.

birds in ploughed fields bordering the Moray Frith, east of Inverness; and in January 1849, remarked large flocks of them about Loch-in-daal, Islay. They may be considered as common in Ireland as in England or Scotland.

Among some birds kindly given to me by Dr. Cantor, in 1840, as killed about the Bay of Bengal, is an adult gull of this species, identical in all respects with an Irish specimen with which it was compared.

THE BROWN-HEADED, OR MASKED GULL.

Larus capistratus, Temm.

At a meeting of the Zoological Society of London, in March 1833,* I exhibited an adult specimen of this bird, shot at the river Lagan, near Belfast, on the 28th of August, 1832. The specimen, previous to its being thus exhibited, was carefully compared by Mr. Yarrell and myself, with one from Shetland, in the collection of the society, and which had been described by that gentleman in the Proceedings for 1831, p. 151. Though not in the same state of plumage, they were found to be perfectly identical in species. A description of the Irish specimen, drawn up previous to its being skinned, was as follows :—

Length from the point of the beak to the end of the tail-feathers, 15 inches; from the point of the beak to the first feathers, $\frac{1}{16}$ less than one inch; from the point of the beak to the end of the gape, 1 inch 10 lines; the second primary is $\frac{5}{8}$ of an inch longer than the first; length of the tarsus, 1 inch 6 lines; of the middle toe and nail, 1 inch 6 lines. The beak towards the base all red; towards the tip black; primaries white, edged and tipped with black, broadest in the inner web, shafts white; legs and toes pale red, webs of the feet deep reddish-brown. Irides, deep reddish-brown. Upper mandible straight for half its length from the base, the other half much arched and extending more than $\frac{1}{8}$ of an inch over the lower mandible.

On the 28th of June, 1834, I shot a bird of this kind (of the preceding year), which was accompanied by several others in similar plumage, near Minish Island, Clew Bay, county Mayo, and more were observed in the same bay a few days afterwards. But I then doubted if *L. capistratus* be a distinct species, and if they be not rather

* Noticed in Proceedings Z. S., p. 33.

small and partially immature individuals (females chiefly) of *L. ridibundus*, that have borne this name;*—and whether, as this species, like other gulls,† differs a good deal in size, *L. capistratus* should not be reduced to a synonym of *L. ridibundus*, as *L. argentatoides* has been to *L. argentatus*. I have critically examined a number of specimens at various seasons, and found them to differ much in the relative proportions of parts; thus, in an adult bird, only fourteen inches in length, shot on the 21st of January, 1835, the tarsi, &c., examined when fresh, were :—

	in.	lin.
Length (total)	14	0
„ of bill above	1	3
„ „ to rictus	2	0
„ of wing from carpus	12	9
„ of wings beyond tail	2	6
„ of tarsus	1	10½
„ of middle toe and nail	1	8
„ of outer „ „	1	6
„ of inner „ „	1	3½
„ of hind „ „	0	4
Tibia bare of feathers for	0	9

This bird is mature: the black head is beginning to appear. From the upper portion of each black *ear-spot* across the nape, there is a rather faint show of black. Legs and bill of a colour intermediate between "tile-red" and "scarlet-red" of Syme.

Two adult birds previously noted—killed in Belfast Bay, on December 6th, 1833 — and measured before being skinned, were respectively, in length, 14 and 14½ inches; irides hazel; tarsi and toes of a dull coral-red; webs of feet chocolate-brown; bill for rather more than the half from base dull coral-red, remainder (to the point) blackish: these birds being purchased by me and preserved, other characters not liable to change were left for future observation. To be more precise.—

First, *as to size*.—The following are the dimensions of an adult

* A specimen killed in Belfast Bay on the 22nd of August, 1844, exhibited the characters of the two species. It was an adult bird with pure white tail, and in the plumage of *L. ridibundus*; but its tarsi and toes were brownish-red in colour, as those of *L. capistratus* are described to be, instead of the arterial blood-red of the other: the first two quills were not fully grown. Its length was 15 inches; bill from forehead to point, 14½ lines; tarsus, 20 lines; middle toe and nail, 18 lines.

† See, under *L. argentatus*, my remarks on *L. argentatoides*.

veritable *L. ridibundus*, with black head, bill and legs arterial blood-red, which I shot in its breeding-station at Ram's Island, Lough Neagh, on the 15th June, 1833.

	in.	lin.
Length (total)	15	6
,, of carpus to end of first quill	11	8
,, of bill above	1	3
,, ,, to rictus	1	11
,, of tarsus	1	7
,, of tibia (bare portion)	0	10
,, of middle toe and nail	1	7
,, of inner toe without nail	1	0
,, of inner toe-nail	0	2
,, of hind toe and nail	0	5

September 26th, 1833.—I examined a living bird, taken from a nest at Ram's Island (on the day the preceding one was shot), and which is now within about ten days of being four months old, and found that in this bird, which was presumed to be a male, the bill was more robust, and the tarsi longer and stronger than those of the adult female: bill and tarsi exceeded those of the adult female one line in length. It will be seen how this agrees with the Shetland specimen described by Mr. Yarrell. He says:—"The whole length of this specimen, from the point of the beak to the end of the tail-feathers, is 15 inches; from the point of the beak to the end of the first feathers, 1 inch and ½ a line; from the point of the beak to the rictus, 1 inch 10 lines; from the carpus to the end of the first primary (which is the longest), 11 inches 8 lines; length of the tarsus, 1 inch 7 lines; of the middle toe and nail, 1 inch 6 lines."* My specimen was not selected as being small in some of its proportions, but was merely one of three birds which were killed on the occasion.

Secondly, *as to colour of tarsi and toes*.—That stated to distinguish *L. capistratus* from *L. ridibundus* is a mere transition shade, through which all individuals of the latter pass before the arterial blood-red hue is attained.

Thirdly, *the disposition of black or brown on the head*, whence the name *L. capistratus*, and more definitely *masked* gull of British authors, is, likewise, either a transitional or an accidental appearance, and the shade of that colour varies from the broccoli-brown attributed to it,

* Proceedings of the Zoological Society for 1831, p. 151.

to that of *L. ridibundus*. Through a telescope, I have frequently remarked some of these birds when feeding, at distances between 60 and 100 yards, to have the black disposed as in *L. capistratus; i. e.*, the bird when looking towards me, displayed a black head; but when walking from me, its head appeared pure white. This was particularly noted on the 17th of April, the 3rd, 18th, 27th, and 28th of May, 1832. In favour of the view that the black taking a masked form is occasional or accidental, rather than transitional, is the fact, that I have seen immature birds when first assuming the black head, displaying black feathers, as low down on the back of the head,* as *L. ridibundus* ever has them at any age.†

Fourthly.—My specimens of *L. ridibundus* and *L. capistratus* do not present any marked difference in the shade of colour of the under surface of the wings.—See Temminck, part ii. p. 786.

Fifthly.—This author (p. 787) states that the eggs given to him as those of *L. capistratus*, are rather smaller than the eggs of *L. ridibundus*. Smaller individuals may be expected to lay smaller eggs, and, as mentioned of those at Ram's Island, no two eggs in the same nest were exactly of the same size or form. If the species be different, we may certainly expect to find a difference in the eggs, but it is essential that a number or series of these be seen before their differential characters can be properly known.

I have many more notes in addition to those already given, which show that the size of bill and feet, and length of tarsus, three of the chief characters by which *L. capistratus* is distinguished from *L. ridibundus*, are liable to much variation. I shall only add a comparison of an adult with a young bird of the preceding year, which were killed from a large flock at the same shot near Belfast, on the 15th of February, 1838.

	ADULT.		YOUNG.	
	in.	lin.	in.	lin.
Length (total)	15	9	14	3
„ of bill above, in a straight line . .	1	2½	1	2

* I once remarked a young bird of the year, in the month of August, with brown feathers on the head forming the regular hood; the lower part of the back of the head, as well as the upper, being of this colour.

† This bird is believed by Temminck to attain full plumage within a year; but I have often had proof of individuals, at least, not doing so until the second summer after birth.

November 1850.—An adult *L. ridibundus* (as I consider) of the ordinary size added by Dr. J. D. Marshall to his collection of living birds in October 1849, and still in his possession, exhibited a mask like that of *L. capistratus*, as figured by Yarrell, during the whole of last summer. It was of a pale broccoli-brown colour.

	ADULT.		YOUNG.	
Length of bill to rictus	2	$0\frac{3}{4}$	2	0
„ of tarsus	1	10	1	9
„ of middle toe and nail . . .	1	6	1	5
„ of carpus to end of longest quill .	12	6	11	3
Wings pass the tail	2	0	1	8

Weight of adult (a male) 11 oz.

Weight of young (a female) 9 oz.

ADULT.

Bill bright red, except towards the tip, which is brownish-red. Legs and toes of a pale hue, partaking of orange and vermilion-red. Webs of a darker tint.

YOUNG.

Bill brownish-red for about the posterior half, from nostrils forward, blackish.

Legs and toes of a very pale brownish-red, webs broccoli-brown. Mantle of a somewhat paler hue than in the adult, as are the under sides of the wings also. Its stomach was nearly empty, but contained the remains of a large coleopterous insect.

It should be stated that this difference in size between old and young is not necessarily consequent on age, but may rather be a sexual difference, the smaller bird being a female.—See note on young and old from Ram's Island at p. 336.

Thus in February, the bill and legs of the young bird were those of *L. capistratus*. The same individual in the preceding month of August (like two which I examined on the 4th of that month) would have had the bill pale flesh-colour at the base, blackish-brown at the tip, the tibia, tarsus, toes, and webs of feet pale flesh-colour, the last with a slight dusky tinge in the centre.

The preceding notes, together with a number of others of a similar tendency, made on specimens obtained about Belfast, justify me I think in considering *L. capistratus* as specifically identical with *L. ridibundus*, and this view is strengthened by the fact that the former is as yet unknown in any country except as an occasional visitant.*

* *May 20th*, 1845. Since the preceding was written, I have—through the kind attention of Mr. G. R. Gray—examined in the British Museum, the specimen of *L. capistratus* that was so named by Temminck (Bullock's specimen, purchased by Dr. Leach), and found it to be in

	in.	lin.
Length total (stuffed specimen)	15	0
„ from carpus to end of first quill	11	6
„ of bill from forehead to point	1	2
„ of tarsus	1	$7\frac{1}{2}$
„ of middle toe and nail	1	4
„ of outer „	1	4
„ of inner „	1	1
„ of hind „	0	3

No difference in plumage except in mask instead of hood. The feet are very small. A critical comparison of this bird with my specimens of *L. ridibundus* proved it

Having now given—perhaps much too fully—my own reasons for believing this bird and *L. ridibundus* to be the same, I shall not enter into the question of the various opinions on the subject, further than in reference to my friend Mr. Yarrell. On the 27th of May, 1845, I brought my views on the subject before the Zoological Society in London, and exhibited many specimens in support of them. An abstract of my remarks was published in the Proceedings of that Society, in the 'Annals of Natural History,' and in the preface to the first volume of the second edition of Mr. Yarrell's work. In its proper place, under *L. capistratus*, in the second edition, my original specimen—though given in the first edition—is omitted, while the Orkney one with which it was compared by that author and myself, and was proved to be identical with in species, is retained: descriptions of both, and of a specimen so named by Temminck, have been given in the present volume.

Mr. Yarrell appears still to think—he does not speak decisively—that *L. capistratus* is a distinct species, and instances two adult individuals only twelve inches and a half in length, having come under his examination; but such are not near the dimensions of this bird, as given by Temminck.* If there be a small black-headed gull distinct from *L. ridibundus*, this is quite a different question from *L. capistratus* being identical with it. An adult bird shot at Lough Clay (county Down) on the 16th of July, 1845—one of a pair known to have a nest there—was smaller not only than the ordinary *L. ridibundus*, but than the *L. capistratus* also. It was, in total length, thirteen inches and three-quarters (English measure). *Colour*: Bill dull arterial blood-red; tarsi between that colour and the hue attributed to *L. capistratus*;

to be no smaller (except in the toes and webs of feet) than some of them, and to vary in the most trivial degree from the adult female bird in full summer plumage. The difference was, in my opinion, simply *individual*, as distinguished from *specific*.

* His only measurements named for *L. ridibundus* and *L. capistratus*, are—

	in.	lin.		in.	lin.
Length (total)	14	0		13	4
,, of tarsus . . .	1	8 (or 9)		1	6

This is of course French measure, in which fifteen inches are equivalent to sixteen English.

head broccoli-brown above; from base of bill, downwards, in front, becoming gradually darker, or from broccoli-brown to blackish. The black is between a mask and a hood in form. In this individual, therefore, we have in the height of the breeding season the colours of the two supposed species.

So many closely-allied birds were confounded together when Temminck described the *L. capistratus*, that it would have been a very fair museum species for any distinguished ornithologist to notice. In addition to numbers of specimens in various states of plumage, it often requires a great amount of observation out of doors, to decide a point of this kind.

THE KITTIWAKE.

Larus tridactylus, Linn.
,, *rissa*, Brunn.

Is a regular summer visitant to the coast in great numbers;—some are met with during winter.

The same is said of the species in Great Britain.* This gull is gregarious in the breeding season, frequenting every side of the island, and building in "mural precipices," which are its favourite haunts. Dr. J. D. Marshall informed us in 1834, that—"This is by far the most common species of gull in Rathlin. On nearly all the precipitous headlands north of the Bull, these birds take up their summer residence, and during my visit (in June) were in such countless multitudes as to darken the air above our heads. Along the headlands of Raghery every pinnacle and ledge of rock was tenanted by the razorbill, puffin, or kittiwake gull; and numerous as the others were, the last far outstripped them in number. The nests were formed of dried grass, sea-weed, &c.; and the eggs, usually two in number, are of a grey colour, blotched and dotted with brown and purple. When I looked down from a height on these nests, it appeared wonderful how the birds found

* Jardine, 'Brit. Birds,' vol. iv. p. 312.

room to sit and hatch their eggs, or tend their young, for five or six nests were placed on a shelf of rock so close to each other, that the birds sat in contact, and, if not peaceably inclined, would have thrown the whole into confusion, and prevented each other from fulfilling the process of incubation. Yet they all seemed to live in harmony; and except when one unintentionally occupied a nest not its own (which very rarely happened), they never attempted to disturb one another. The young, when first excluded from the shell, are covered with a greyish down, intermixed with white. Their food consisted chiefly of fry. For two or three miles along the base of these cliffs, the rocks were covered with eggs, from which the young had been liberated—young birds which had been precipitated from the rocks, and with the excrement and feathers of the adult birds."

On my visiting the Skerries off Portrush on the 12th of July, 1833, a large number of kittiwakes were assembled on a rock; my companion fired at them and killed several, all of which were in adult plumage: their legs varied much in colour, from a yellowish-olive to pale black; irides very dark brown:—they were not breeding on those islands.

In June 1832, I saw kittiwakes in immense numbers about their nesting-places in the range of magnificent cliffs westward of Horn Head. Under date of the 29th it was there noted, that from the Temple Brig, looking eastward, I saw at one view thousands sitting on their nests, which are all placed on narrow horizontal shelves, for about half-way up the rocks from the water, and in depth only sufficient to contain a single row of them. They are placed close together, and the birds on them as near to each other as they can sit. The nests are very thick (fully three inches), round in form, and composed apparently of the grass *Elymus arenarius*. They are perfectly circular inside, and exhibit no feathers as lining to the sides: being every one occupied, the bottom is not visible. When some of the old birds stand up in the nests, their young, about the size of newly hatched chickens, and of a brownish-grey colour, are seen. Some of the old birds exhibited the pretty and graceful gestures of the dove when

cooing, and looked consummately happy. There is quite a line of demarcation between the nesting-places of the kittiwake and herring-gull, the former occupying the lower (as has been stated), the latter the upper half of the same cliffs, but the nests of the herring-gull are not so numerous, nor are they, either here or anywhere else that I have seen them, in a continuous row like those of the kittiwake. They appear singly and irregularly dotting over the face of the cliff.

Audubon mentions kittiwakes breeding in great numbers on the Gannet Rock of the Gulf of St. Lawrence, where the situations chosen for the nests, &c., were such as have been described. He adds, however, that—"No other species of gull was seen about the rock," and that he has "regularly observed that each species of this genus breeds far apart, although at all other seasons it may associate with others." On the eastern side of the Atlantic it is not so. About the locality under consideration—Horn Head—five species breed, the kittiwake keeping nearest to the water, and the others occupying the higher portion of the same cliffs.

At Achil, in June 1834, we were told that numbers of this gull breed on Bills rock, off that island, and we saw many on the lofty cliffs of the Great Isle of Arran, Galway Bay. It builds in the precipitous cliffs of Kerry, and off that coast, in great numbers, on the smaller Skellig island (about 500 of them to 1 of any other species of gull) and a few on the larger island of that name;* also at Tearaght rock, near the Blaskets, very numerously† (1850). They likewise nidify on Bull Island, a little southward, off the coast of Cork, and on the precipitous cliffs of that county, as well as of Waterford:—about Helvick Head, they were observed in profusion in the summer of 1838.‡ They breed at the Saltees, off Wexford, in great numbers, where it was observed—"*May* 15. Some birds have arrived and made nests, but only the smaller number contain eggs; on the 24th of June they had eggs and young; and on the 15th of July

* Mr. R. Chute. † Mr. Wm. Andrews. ‡ Mr. R. Davis, jun

young just hatched as well as others ready to fly."* About the rocks of Howth, Ireland's Eye, and Lambay, they have been met with in the breeding season by Mr. R. Ball and myself.

When at the Mew Island—one of the Copeland Islands—in June 1827 and 1832, I was surprised to see very large flocks of kittiwakes, both there and on the neighbouring rocks, all in full plumage, though no breeding-place was near. At the Skerries, too, off Portrush, as already mentioned, numbers were met with early in July: on the island of Rathlin, not far distant, the species has a breeding-haunt; but these individuals, like those at the Mew Island, probably did not seek to multiply their kind. The presence of numbers of full-plumaged kittiwakes in the height of the breeding season about localities where they do not build has been commented on by Mr. Lawrence Edmonston, in the 'Edinburgh Philosophical Journal' for 1822 (No. XIII. or vol. vii.), who informs us:—"Of the multitudes of the *Larus rissa*, or kittiwake, that annually arrive in Zetland to breed, large flocks are observed to keep apart from those which repair to the usual haunts for incubation, resting on the water, or on low rocks, and, from their not breeding, are termed in the dialect of the country *yeeld* kittiwakes.† This singular fact in their history has been stated by Dr. Edmonston in his 'View of the Zetland Islands;' but I am not conscious that any explanation has yet been offered of it." The writer "suspects these yeeld kittiwakes to be merely the young of the first year, which, although attained to perfect plumage, have not yet acquired the faculty of propagation."‡ To the interesting paper itself I must refer for further information and speculations on the subject.

On visiting the Mew Island, in June 1833, under similar cir-

* Mr. J. Poole.

† This would also seem to be the case with the gannet at St. Kilda. Mr. John Macgillivray, who visited that island in 1841, and gave a very interesting description of the birds there, states that—"The account given by Martin of the barren gannets, which roost separately from the others, was confirmed by the natives."—*Edin. Phil. Jour.* January 1842, p. 66.

‡ Mr. Selby (p. 495) and Audubon (vol. iii. p. 187) say, that the kittiwake is two years in attaining adult plumage.

cumstances as to weather, &c., as in the former years, only two or three kittiwakes were seen during the day. An ornithological friend, who spent part of that summer at Ardglass, on the Down coast, remarked kittiwakes to be common there. They were abundant around the Mew Island on the 9th of August, 1849.*

This gull is occasionally obtained in winter in the north of Ireland.† One, killed on the coast at Donaghadee, on the 27th of November, 1834, and another found dead in a bog, ten miles distant from the sea, on the 20th of January, 1837, came under my inspection: both were young birds in the singular and handsome plumage so well represented by Bewick. I have seen an adult bird shot in the river Lagan, above the bridge at Belfast, on the 29th of January, 1845,‡ and another killed in the bay in the middle of February 1846:—the winter plumage of the adult, like that of the immature bird, is peculiar, and has no counterpart in our other British gulls.

Isolated instances only of its occurrence in winter, as just indicated, were known to me until 1849, when within the last ten days of January, one old and two young birds were shot in Belfast Bay, and another old bird was found dead;—they were mere skeletons, as kittiwakes procured at this season here have generally been. Only one contained in its stomach any food, which consisted of the remains of several of the crustaceous genus *Idotea*. Between the 20th of February and 5th of March that year, ten birds, all adult, came under my notice; three shot in Belfast Bay; three found dead on the beach near Holywood, and with them a herring-gull; all seeming to have died a natural death; two were procured at different inland places (one shot and the other found dead), five miles in a direct line from the sea, or, if they followed the windings of the river Lagan, nearly double that distance;—the two others were obtained near Kirkcubbin,

* Mr. J. R. Garrett.

† Dr. Harvey remarks, in the 'Fauna of Cork,' that he has sometimes met with it there in winter.

‡ The ring round the eye in this bird was blackish, instead of orange-red, as in summer.

on the borders of Strangford Lough. All these birds were miserably poor in flesh; four of them weighed respectively 10, 9, $8\frac{3}{4}$, and $7\frac{3}{4}$ ounces avoirdupois;—Bewick notes the weight of the bird as 14 oz. So light were several of these birds that they were imagined by persons lifting them to be mere skins, put up in a natural form by the taxidermist. In the stomach of one was found a specimen of the fresh-water shell *Paludina impura*—of another, the remains of a crab; one was well filled with earthworms and earth (this bird was killed when "following the plough"); and the bill of another contained some dry loamy earth; the stomachs of all the others were empty. At this season the colour of the tongue, whole inside of mouth, and naked skin round the eye, was brilliant orange. On the 12th of February, 1850, an adult bird was picked up dead in Belfast Bay, and, like those of last year, was very poor;—a week afterwards one in good condition was obtained.

The kittiwake, being taken inland in the north, has just been mentioned; and, with respect to the county of Wexford, we are told that it "sometimes wanders inland in search of worms, rarely alighting, however, but dipping down for a moment to pick something up, and quickly resuming its flight."* This is opposed to the usual habit of the species:—both Mr. Selby and Sir Wm. Jardine remark, that it never advances inland; but feeds exclusively on the productions of the sea.

Mr. Selby observes, that the kittiwake "seems to be more abundant upon the eastern than the opposite side of the kingdom [England]," adding "which may perhaps be attributed to the line of its migrative flight from the eastern parts of Europe, to which shores the great body of those that breed here seem to retire in winter" (p. 494). But may not its comparative scarcity on the western coast of England rather be attributed to a want of suitable breeding-places, as in Ireland a westerly position has no influence in this respect, several of the islets lying off the western coast from north to south being its greatest breeding-haunts?

* Mr. J. Poole.

Mr. G. C. Hyndman has mentioned to me, that when he was sailing, on the 24th of June, 1844, some miles from Ailsa, kittiwakes—which breed in quantities on that majestic pyramidal rock—were attracted by the bait that was out for gurnard, and which, in consequence of the speed of the yacht in sailing, was dragged along the surface. Perceiving this, he threw out pieces of fat meat to them, when about twenty gathered round the vessel, and followed it for two or three miles.

At Ballantrae, on the coast of Ayrshire, these birds are commonly taken, in the following manner, by idle boys. They bait hooks with the liver of the cod-fish, and fling them as far out from the shore as possible, having a stone as a counterpoise to the gull's weight attached to the opposite end of the string, and left at the edge of the water. They then retire to such a distance as to allow the victims to come freely to the bait, and so soon as this is swallowed, they hasten to the stone and draw in the line with the hooked gull at its other extremity. Various species of gulls have been thus taken. The kittiwakes are purchased on the spot at a penny each for the sake of their feathers, and a person of my acquaintance there has obtained as many of them from birds captured in this manner, as have sufficed to stuff some pillows.

When proceeding, on the 1st of February, 1849, in a steamboat from East Tarbert to Greenock, and about the entrance to Loch Fine, I was attracted by the great beauty of an immature gull of this species during flight. Its beauty consisted in the black margined wing, the black band round the hinder part of the base of the neck, and the black terminal band of the tail. The black along the entire anterior portion of the wings, and continued as it were across the base of the neck from one wing to the other, had a very handsome appearance.

Mr. Hewitson, in his elegant work on the eggs of British birds, gives an interesting account of the kittiwake at the Shetland Islands. The late Mr. G. Matthews remarked it as very common in summer along the coast of Norway.

THE IVORY GULL.

Larus eburneus, Gmel.

Has very rarely been observed.

The following was published in my Report on the vertebrata of Ireland in 1840:—"In the Appendix to Ross's second voyage, it is remarked, under the head of *Larus eburneus,* 'this beautiful gull has lately visited the western shores of Ireland,' p. 35. By Captain James C. Ross, the author of this Appendix, I have been informed that, early in the year 1834, he derived that information from Joseph Sabine, Esq., who told him simply what is published. For some years, however, I have had a note, communicated by the late Thomas F. Neligan, Esq., of Tralee, who was very well versed in British birds, that, in January 1835, he saw a gull in a field near that town, and four miles distant from the sea, which he was satisfied was the *L. eburneus.* The ivory tint of its plumage, and its black legs, attracted his attention, and he watched the bird for about twenty minutes."

Mr. R. Chute, writing to me in February 1846, from Blennerville, near Tralee, remarked, that he had heard of an ivory gull being seen in that neighbourhood (probably the one just alluded to), and another near Dingle. In the next year he supplied the following more satisfactory information:—"After the storm that occurred in the beginning of February 1847 there were several ivory gulls about here; I heard of three being seen near Dingle;—one of them I saw myself. During my absence from home, two of them for a few days in succession alighted in my yard; my servant thought they were tame birds, and did not frighten them. However, one was shot on the third day, and when I came home I found it to be an ivory gull in rather immature plumage: the other bird they said was pure white:—though frequently seen since, I was not able to procure it. I have the bird that was shot now in my collection."

Mr. G. Jackson informs me that a gull of a pure white colour appeared, in January 1849, in the harbour of Glengariff (Bantry Bay), and remained for three days. He and others made every attempt to obtain it, but without success; he was certain of its being the ivory gull, from descriptions of that bird which he had read, but he had never seen one before. An adult bird was picked up dead, but quite fresh, on the beach of the island of Achil, a few years ago, by a man of the Preventive Service.

The ivory gull is an inhabitant of the arctic regions of both hemispheres, and but rarely moves so far south as the British Isles. The individuals known to have been obtained in Great Britain down to 1845—the date of publication of the 2nd edition of Yarrell's 'British Birds'—were but four in number; obtained in Shetland, the Clyde, Durham, and Yorkshire;—but as many have since been recorded as procured at different periods in one of the southern counties of England,—Sussex.*

THE COMMON GULL.

Larus canus, Linn.

Is found around the coast at all seasons, but in smaller numbers than some other species. Inland, it and the black-headed gull are the most frequent.

In the north-east of Ireland, at least, we do not find this species breeding commonly on the marine cliffs like the herring-gull. About the noble basaltic precipices of Antrim and Londonderry I have never met with it; but we are told that, in the island of Rathlin, in June 1834, it "occupied one of the large natural amphitheatres formed on the north-western side of the island, and which seemed to be occupied by no other species. Their nests were placed towards the summits of the cliffs, in situations equall

* Two at Brighton, one at St. Leonard's, and one at Rye. Knox's 'Ornith. Rambles in Sussex,' p. 246.

accessible from above or below; and when disturbed the birds would soar away at such a distance as to be free and undisturbed by any intruder."* On the peninsula of the Horn, to the westward of Horn Head, we on the 25th of June, 1832, shot three of these gulls, which came flying up from the precipitous cliffs, where they probably had their nests. They were in adult plumage, and had brilliant yellow legs. The species is known to Mr. J. V. Stewart, as breeding there apart from other gulls, on the lofty cliffs, where he has shot them on their nests;—they select places for nidification like the herring-gull. On the 1st of August, 1850, about eighty old birds, and as many young of the year, were seen together at one part of the rocks of the Horn.† Mr. T. Neligan informed me, in 1837, that the common gull breeds in numbers on a low grassy islet off the Kerry coast, where he had himself seen their nests: this was their only breeding-place known to him in that quarter, though he considered the species to be common there. The locality was not named, but one of the Magharee islands, in Tralee Bay, was perhaps meant, as it is the only breeding-haunt known on the coast to Mr. R. Chute. This gull is noticed by my correspondents as common on the whole southern and eastern coast; but with respect to its breeding-places, they are silent.

Mr. W. M'Calla, on communicating to me a list of the gulls frequenting Roundstone Bay, county of Galway, and enumerating five species, did not include this; but, on being questioned, remarked that "gulls with *green* legs were plentiful," by which description this species—in winter garb—must be meant.

A very small number only of the *Larus canus* on our shores in autumn and winter, can be bred in Ireland: they must come from more northern breeding-haunts. Referring to Temminck, I was much pleased to find him remark that this gull, though very common in winter on all the coasts of Holland and France, is in summer found towards and within the arctic circle (vol. ii. p. 774). The herring-gull, on the other hand, is mentioned by this author (p. 766) as remaining during the year on the coasts of Holland

* Dr. J. D. Marshall. † Mr. Robert Taylor.

and France. What he says of both species in those countries applies to them generally in Ireland.

This gull is much seen about estuary rivers, and we are more certain of having an opportunity of observing it when the tide is flowing or full about the bridge spanning the river Lagan, at Belfast, than anywhere in the neighbourhood. To witness them feeding here is a very pleasing sight, and many a passer-by pauses to admire them. Their flight is so much lower and nearer to persons passing over the bridge on Sundays than at other times, in consequence I have no doubt of the greater quiet of the day and absence of all bustle, that it is often remarked, "they know well when Sunday comes," it being imagined that they are aware they will not be fired at on that day. They are here at all seasons, but in the height of summer very few are seen. Once, on the 22nd of May, I noted twenty flying about the bridge, but all of them were immature. Owing to the absence of gulls generally from the adjoining bay in the breeding season, it is deficient in one of the finest elements of life and beauty, and at low water, with the vast extent of banks exposed, appears comparatively a dreary blank. Along an extent of miles we now see but a few individuals, not more than a unit for a hundred in the winter season. Some fowlers have observed, that the only birds always to be seen here are a few gulls, curlews, ring-plover, and dunlins: most of the other species being entirely absent until the time of their return from breeding. Indeed, though the bird is out of view and far distant from us at the edge of the channel during extreme low water, we may daily hear the sharp clear cackle of the young herring-gull, which sometimes rings acutely on the ear, the same note being often repeated about a dozen times. It is almost invariably answered by another bird, and often from a distance of between one and two miles; both birds are rarely visible at the same time.

That common gulls often retire to a distance inland from the sea is well known. Sir Humphrey Davy remarks upon the subject:—"I believe that the reason of this migration of sea-gulls, and other sea-birds to the land, is their security of finding food.

They may be observed at this time feeding greedily on the earth-worms and larvæ, driven out of the ground by severe floods; and the fish, on which they prey in fine weather in the sea, leave the surface when storms prevail and go deeper."*

There is a poetic version of the same idea common to old people in the north of Ireland:—

"Sea-gull, sea-gull,
Sit on the sand,
It's never fair weather
When you come to land."

No doubt they are partial to inland trips when the country is flooded, and during storms; but I have particularly remarked that a tract of low-lying meadows near Belfast is, when under water, always visited by them, in calm as well as storm, in fine and bright, as well as in dull and cloudy weather;—the flood, occur when it may, is an all-sufficient attraction:—young birds of the year, too, make their way to this locality at the first flood of the season. The storm seems to prompt these gulls to flight whether they be at sea or inland, and I have frequently—perhaps as often—remarked them during storms to fly from the land to the sea, as in the opposite direction. They fly inland, too, during storms, though there have not been any floods, and often keep at a considerable elevation at such times. Sir Walter Scott, in the following lines, alludes to the approach of the storm being known to these birds:—

"Moor, moor the barge, ye gallant crew!
And, gentle ladye, deign to stay!
Rest thee in Castle Ravenscheuch,
Nor tempt the stormy frith to-day.

"The blackening wave is edged with white;
To inch and rock the sea-mews fly;
The fishers have heard the water-sprite,
Whose screams forebode that wreck is nigh."

Lay of the Last Minstrel, canto vi.

On the 20th March, 1834, the ground being remarkably dry, as no rain had fallen for the preceding three weeks—(and, as

* 'Salmonia,' p. 193, 2nd edit.

subsequently noted, fine for some days afterwards)—I observed near Drogheda and Dublin, many of these gulls in grass and ploughed fields several miles from the sea, and in some places mingled with rooks: there was no ploughing going forward to furnish them with food. Rarely, I have seen large numbers retire a short way inland from Belfast Bay, at high water, and in the same field with herons await the falling of the tide, but in this locality they are not in the habit of retiring to land at such times, like the latter species, the curlew and other *Grallatores*. The flowing tide gently lifts the gulls on its bosom, on which they silently repose, while the waders are obliged to change their quarters.

When driving with Mr. R. Ball, about a mile inland from Dundrum Bay (county Down), during low water, on the 22nd of September, 1849, we had our attention arrested by about thirty of these gulls in a field, forming several little parties, and seated on the short pasture, as if they were swimming, all with their heads turned seaward. There were others in the adjoining fields: and all were adult. They allowed us to pass in a vehicle within twenty yards of them.

At high water, flocks of these gulls sometimes, after their manner of disporting themselves—as alluded to under the black-headed species,—rise to a great elevation in the air, and continue for a long time on wing, within a very limited space, often, indeed, appearing as if their flight were confined within a "given" circle; but occasionally one or two will bolt from this circus-like *manège*, and shooting like rockets, apparently direct through the midst of the circling body (though they may perhaps be really outside the circle), present a most singular appearance. When thus amusing themselves, these gulls may boast, that

> "In regions mild of calm and serene air
> Above the smoke and stir of this dim spot
> Which men call Earth,"

they hold their court.

The time given to this flight is not at the expense of their feeding hours, as at high water in Belfast Bay they merely

float on the waves:—their busy feeding-time is when the tide ebbs. Minute crustacea (often *Idoteæ*) form the bulk of their food. The contents of the stomach of one bird killed in Belfast Bay, were about fifty univalve mollusca, including *Rissoa labiosa* (fine specimens), *R. ulvæ*, *Lacuna quadrifasciata*, and small *Littorinæ*; they also partake of marine plants. In addition to earth-worms and insect larvæ found on dissection of birds killed inland, vegetable food, including husks of grain, frequently occurs:—a frog was found in one killed in November, near Wexford. A gentleman of my acquaintance induced a gull—that he believed to be of this species—to follow a steamer from Liverpool to the Isle of Man, merely by throwing towards it pieces of bread, which were invariably seized before they reached the water.

Many notes descriptive of size, plumage, &c., at different seasons, and at the various ages of the bird, are before me, but it will suffice to select two or three of the most striking:—

October 23rd, 1833.—An adult *Larus canus*, killed to-day in Belfast estuary, had the plumage of the breast, belly, and under tail-coverts, faintly blushed with red, like the same portions of the *L. ridibundus*; the tarsi were yellow, with the bluish-green colour of the approaching season, indicated only as yet at the folds of the tarsal joints. Of two other adult birds, obtained on the 10th of September and the 18th of October of the preceding year, the former had the tarsi, toes, and webs of feet of a uniform bluish ash-colour, and the latter of a delicate bluish flesh-colour, faintly clouded with pale yellow about the tarsal joints; its bill was wholly bluish-green.* *December 24th*, 1835.—Being struck with the appearance of the short bill of an adult *L. canus*, procured near Belfast, I measured it, and found this organ to be of similar dimensions with that of the *L. brachycentrus*, Rich. and Swains. *February 13th*, 1838.—On examination of two specimens of *L. canus*, shot to-day, the one adult, and the other immature (a bird of last summer), their entire length was the same, but the wings of the young bird, from the carpus to the end of the longest quill, were an inch longer than those of the old. The bill of the old bird was blackish-green, tipped with wax-yellow; in the young, leaden-blue at base; blackish towards the point. The tarsi of the old were greyish-green; of the young, bluish flesh-colour.

Of the breeding-haunts of the common gull around the coast

* Adult birds shot at Horn Head, in the last week of June this same year, had the tarsi and toes brilliant yellow:—they are described as being at this season "greenish-grey" (Jardine), and "dark greenish-ash" (Yarrell).

of Ireland, the marine cliffs of Rathlin and Horn Head, and a low grassy islet off Kerry, are all that I can positively name; other places will doubtless be added. Even at St. Kilda, however, we learn that in the breeding season it is not only less common than the kittiwake or herring-gull, but than either the lesser or greater black-backed species.* We are also told by Mr. Dunn, in reference to the island of Bressa, that "there are several cliffs in the neighbourhood where the herring-gull breeds, and also a few of the common gull, which are the scarcest of the tribe in Shetland, with the exception of the skua gull." It is likewise said of the *L. canus* — "During the summer season, this bird is the scarcest of the gull tribe in these islands. I have found a few pairs incubating in company with the herring-gull, and occasionally a solitary pair breeding in the cliffs without any associates; they may be found occasionally on the small islands in the lakes."†

When at the island of Islay (Scotland) in January 1849, I visited what in the season is apparently one of their finest breeding-haunts on the British coast. On making inquiry respecting all the sea-birds that nidify in that quarter, I was told of a small gull annually resorting to Kinrevock, a low grassy islet a few miles distant, also frequented by terns for the same purpose; that their nest is placed on the short pasture of the island, like that of the tern; the difference being that the gull makes a regular nest of grass, while the other deposits its eggs on the bare ground. Though the site of the nest and the description of the bird were applicable to *L. canus*, I was anxious to have some corroborative proof, and this was afforded by the gamekeeper pointing out to me some gulls on wing (flocks of which were feeding in the ploughed fields), as the species which bred there;—these were all common gulls, as were also the specimens pointed out by him in the museum at Islay House as the kind which breeds on the island. He considers that about a hundred and fifty pair breed on Kinrevock and the closely adjoining islet; from the

* Mr. John Macgillivray, 1842.

† 'Ornith. Guide to Orkney and Shetland,' pp. 53 and 108.

middle to the end of May 1848, great numbers of their eggs were found.

I requested that a few eggs would be procured during the ensuing season in proof of the species, and they were obtained for me;—genuine eggs of *L. canus*. But with them I received the grievous information that in two days eight hundred and fifty of their eggs and those of terns were collected by my friend and his assistants. By far the greater number were those of the gull, as it was early in the season; this bird laying three weeks sooner than the tern (*S. hirundo*).

The north of Europe—coast of Norway, &c.—is the great breeding-haunt of the common gull.

In the summer of 1826, I remarked immature gulls of this species in Holland; very far up the Rhine; about the lakes of Switzerland, and what seemed to be they also, near the shores of Italy. When proceeding by steam-packet, on the 13th and 14th of April, 1841, along the coast from Leghorn to near the Bay of Naples, a number of gulls, which appeared to be *L. canus*, were seen about the vessel: all that I particularly observed were immature—no other *Larus* was within view during these two days. On the 16th, gulls, apparently *L. canus*, were seen in the Straits of Messina. When sailing in H.M.S. *Beacon*, from Malta to the Morea—21st to the 28th of April—similar gulls were in view as we approached within twenty-five miles of land, towards Navarino, and became numerous at the entrance of the bay; where they seemed to have breeding-places in the cliffs. A note dated Syra, May 7th, is to the effect that the only bird now common in the harbour here is a gull like *L. canus* in size and colour, but a dead specimen which I saw on the beach differed from this species in having on the lower mandible a red spot, like that of the herring-gull; all the rest of the bill was yellow; the upper plumage was of a darker blue than in *L. canus*; the tarsi yellow as in the adult *L. canus* at this season. All I have seen here, during two or three days, were adult birds, of which small flocks were always in view;—subsequently immature birds were met with. I do not find in Temminck's or Degland's

works any indication of a gull differing, as here described, from *L. canus*. On the 10th of June, at a small rocky islet with high cliffs, to the north-east of Port Naussa, island of Paros, I remarked the same species, and another like the *L. argentatus*: it was just such a locality as the two kinds would select for breeding quarters in the north of Ireland.

The Bishop of Norwich, in his 'Familiar History of Birds' (vol. ii. p. 240), gives an interesting account of gulls, as observed by himself at the South Stack, off Holyhead. Mr. James Wilson, in his 'Voyage round the coast of Scotland and the Isles' (vol. i. p. 336), mentions a ludicrous encounter between gulls (species not mentioned) and young goats in a small island in Loch Laxford, from which the goats were routed, in consequence it was supposed of their encroachments on the nests of the birds. In the 'Recreations of Christopher North' (vol. ii. p. 181), we find gulls commented on in the author's own eloquent manner.

THE HERRING-GULL.

Silvery Gull.

Larus argentatus, Brunn.

Is common around the coast throughout the year.

Breeding-haunts.

Under *L. canus* a few observations were made respecting the frequency of the breeding-haunts of the herring-gull around our coast, compared with those of the so-called *common* gull. Proceeding from Belfast Bay, northward, we have seen (June 12th, 1834) several hundreds of herring-gulls about their nests at the range of precipitous rocks just outside its entrance, called the Gobbins, and all but one were in full plumage. Of late years herring-gulls have bred here in great numbers;—in 1849, it was estimated that at least 1,000 pair bred. In the very early spring of that year, about a fourth of the number which breed here had

collected about the rocks so early as the 22nd of March, when the place was visited by an ornithologist, but very severe weather ensued, and they were later in laying than had been previously known. I visited the rocks on the 2nd of May, and on sending a man down to their chief building-places, in three different parts of the cliffs, not an egg was found, but the nests, which are formed of grass, &c., were completed for their reception. The rocks were said never before to have been without eggs on May-day. Heddles, who has gone down the cliffs here in the season, to collect eggs, for above thirty years, states—that the usual number is three, rarely four; that there is one brood, and the period of incubation is a month. He thinks that they would continue laying in the same nest for a month if the eggs were all regularly taken away when quite fresh, but that if one be left they will incubate it. He is in the habit of taking the eggs for his own use, and that of his friends;—as objects for sale, they are not collected here, unless specially ordered, nor is any one accustomed to go down the rocks but himself.* These gulls, with the exception of a few, leave the rocks every morning, and do not return before evening, until the complement of eggs has been laid and incubation commenced. They are said to breed occasionally before being perfectly mature, but the plumage, &c., of such birds described to me denotes their being three years old. They leave the rocks so soon as the young are able to fly, which is generally early in August. During the winter not one is seen here. At all times of spring and summer that I have known this locality visited, some of these gulls were about the newly ploughed ground; occasionally in little flocks of from six to ten in number, "following the plough," and in such cases generally exhibiting more caution than the black-headed gulls when so engaged, by alighting *behind* the ploughman. From these birds frequenting the newly-sown oat-fields, it is imagined that their visits are in search of the grain, in proof of which it is urged that "shellings" of corn are seen

* An ornithological friend who partook of the eggs of the herring-gull and razor-bill obtained here, considered those of the former, though quite fresh, to have a very strong flavour, while those of the latter were good and delicate.

about the face of the cliffs; but as jackdaws likewise build there, the evidence is insufficient for the conviction of the gulls:—it is not, however, improbable that they may occasionally pick up grain. On examining the stomach of one bird shot in a field here, I found it, with the exception of a little vegetable matter, filled with terrestrial coleopterous insects.

1833–1842.—At the noble range of headlands from about Bengore eastward of the Giant's Causeway to Downhill, herring-gulls generally build, where the upper portion of the face of the cliffs presents here and there a little ledge on which a nest can be placed —in the seasons when I visited Fairhead, the grandest of all the headlands, they did not nidify there. About Carrick-a-rede, and the adjacent Sheep Island, the basaltic and chalk cliffs were selected indiscriminately for their nests, and the White Cliffs (as they are called) of the latter rock, west of Dunluce, displayed many of them in 1833. Their nests here are very large, and I have been surprised to see some near the Causeway constructed of small sticks, or thick stems of heather, either of which it would be difficult to obtain in quantity suited to the purpose. Viewed as we sail past the Causeway headlands, these birds have an elegant appearance, dotted over the black and sterile faces of the cliffs, where an occasional little ledge affords room for a nest; but it must be said that they look only coldly beautiful, in comparison with what they do at some other localities, as about the cliffs near the Temple at Downhill, where the rocks, though little more than lichen-covered—yellow and grey of various tints—are with occasional tufts of herbage, many-hued, and present a warm and furnished aspect. Here the gulls with their full snowy breasts look beautiful and in keeping with all around, as they are perched about or reposing on their nests.

The kittiwake does not breed at any of the localities which have just been mentioned in connection with the herring-gull; but in the island of Rathlin, we are told that the latter "occupied the summits of the cliffs tenanted below by the kittiwake. Their nests, like those of the common gull, were placed far beyond reach, except by lowering a man by a rope. Besides being found on the

northern side of the island, these birds occupied the range of white cliffs on the northern side of Church Bay; here they remained quite secure, for they scarcely ever ventured lower than the middle of the precipices, and could in this manner effectually escape the gun of the fowler, either from the summit or base. This species was also found in pairs on the eastern coast, although on this part of the island it was rare. The cry of the herring-gull is very similar to that of the common gull, and the two were not unfrequently confounded with each other, when soaring towards the summits of their respective cliffs."*

About Horn Head both herring-gull and kittiwake breed in the same cliff, with a complete line of demarcation, however, between their separate haunts. Indeed, the rock itself is of a different character at the abode of each species. Below, where tenanted by the kittiwake, it is mural, with narrow, horizontal ledges, "long drawn out," on which their nests are placed close together in a continuous row. Above, in the haunt of the herring-gull, it is more broken, affording room here and there for a nest, and so appropriated; for although this species may be said to breed in colonies, the nests are placed at a respectful distance from each other, and merely dot the face of a cliff. The herring-gull is considered so destructive to young rabbits at "the Horn," where there is a most extensive warren, that a reward of fourpence is given by the proprietor for every head brought to him.

A gentleman, walking round the cliffs of the Horn, on the 1st of August, 1850, remarked, when at Bullock's Leap:— "Cliff and crag were covered with herring-gulls, and the sea dotted over with flocks, each of about seventy in number. I counted ten of these from this point. One ledge of rock was so closely covered, the birds jostled one another when coming to it. I should say the herring-gull is in the proportion of six to one of all the other gulls we saw here, comprising the common, kittiwake, and great black-backed species."† I do not know the

* Dr. J. D. Marshall, 1834. † Mr. Robert Taylor.

particular headland alluded to, but at the rocks of the Horn generally, in June 1832, the kittiwake was greatly more numerous than the herring-gull. The later period of the season, however, may have a great effect on their comparative numbers.

On a visit made to the islands of Arran, off Galway Bay, in the summer of 1834, by Mr. R. Ball and myself, the herring-gull was found in great numbers breeding on the lofty cliffs of the largest island; and we were told of Bill's Rock, off Achil, being another nesting-place. Under *Larus fuscus*, a *low* rocky islet* on the Kerry coast is mentioned, on the authority of the late Mr. T. F. Neligan, as resorted to by that species and the present for the purpose of nidification. It has abundance of ordinary building haunts around this coast, as the Magharee Islands, the cliffs at both entrances to Dingle harbour, the small Skellig rock, and similar places.† On the adjoining coast of Cork they especially abound in the breeding-season; at the Bull and Cow Rocks, off Dursey Island; the cliffs of Bear Island, and those at Cape Clear;‡—they also build in numbers along the coast between the Sovereign islands and the Reannies, both inclusive, where the nests are made of dried grass, and a few of them easily reached; but the greater number are inaccessible.|| On the coast of Waterford, and at suitable cliffs round to that of Dublin, they nidify;—among others here, Howth, the islands of Ireland's Eye and Lambay, may be named.

In numerous localities distant from breeding-haunts, I have in the midst of the season of incubation remarked, in full adult plumage, one or two pair of these gulls, which doubtless took no concern with the cares of the world in connection with offspring.

* Audubon ('Orn. Biog.' vol. iii. p. 589) gives a most interesting account of colonies of this species, that on Whitehead Island, at the entrance of the Bay of Fundy, build on trees in consequence of their nests on the ground having been robbed. He also mentions (p. 592) these birds as rising higher and higher into the air with mussels until they are broken by the fall. Mr. John D. Ferguson (Dunvegan Cottage) informs me that this is a common habit of the gulls in the island of Skye (where *L. argentatus* and *L. canus* are the prevailing species), and may be witnessed any day on the shores towards the entrance of Dunvegan Loch.

† Mr. R. Chute. ‡ Mr. J. F. Townsend. || Mr. R. Warren, jun.

But nearly all the birds we then see are immature. A few hours after visiting the Gobbins, on the first occasion named, a small flock of these came under my notice far up Belfast Bay. When at Strangford Lough, on the 21st of June, a rather large flock of immature gulls of this species was seen on one of the islands: —a bird which was shot proved to be one of the preceding year. On the sands near the Middle Island of Arran, off Galway Bay, a large flock exclusively of immature birds was observed on the 9th of July, 1834. But on the same day of the month of the preceding year I saw, by the aid of a telescope, at the mouth of the river Bann, a very large flock, which appeared to be in one, two, three, and four years old plumage.

With respect to young birds, it struck me as singular that so late in the season as September 23rd (1849), when Mr. R. Ball and I were walking on the road skirting the sea for two miles southward of Newcastle (county Down), a large number of these birds, all in the same stage of immaturity, and in flocks of from five to fifteen, kept flying in succession in the same track above the rocks in a northerly direction;—they flew in perfect silence. So early in the season as the 30th of July, 1845, during a walk of two miles from Belfast on the western side of the bay, I remarked that gulls were numerous as in winter: I reckoned 130 together, and there were several smaller flocks—in the largest body were numbers of birds not less than herring-gulls, and which seemed even larger; there were certainly three species. On the 19th of September this year immense flocks, consisting, it was believed, of thousands of these birds (described as not less than herring-gulls, and apparently larger), were seen by the three chief wild-fowl shooters in Belfast Bay: anything like such numbers had never been observed here before. "They flew southward like wild geese the same day." For a week afterwards, numbers of flocks, consisting of hundreds, remained, but became gradually scarcer until all were gone southward. This is the only instance known to me of gulls appearing here in flocks on migration; and it is an interesting fact that not a single bird in these flocks of hundreds and thousands was adult;—they ap-

peared to be all young birds of the year. Wild ducks, wigeon, and teal* were in great flocks in the bay upon the day on which the large bodies of gulls appeared. They moved southward also. There was no storm to bring these birds here; the wind was from various points, with very frequent changes, during the whole month of September; there was no breeze until the 27th;—on the 29th and 30th it blew hard.

The *Larus ridibundus* and *L. atricilla* have had the name of laughing gull bestowed upon them, but the only species acknowledged as a laugher by the shooters in Belfast Bay is the herring-gull. It takes circuits in the air, uttering all the while a laughing note, which has really been interpreted as such by an old shooter of my acquaintance, who has frequently shot the poor bird merely for—as he believed—laughing at him.

Gulls of all species which have been through the day feeding high up the estuary, and about the oozy banks of the Lagan, are said by good observers to collect together in a flock at the "dusk of the evening," from autumn to spring, and go to deep water to remain for the night. During this evening flight their various calls, described as musically mournful, are uttered; but on returning to the shallows at the early dawn of the morning they are silent, and then fly in a scattered manner. A similar difference between the morning and evening flight of some of the *Anatidæ* has been already noticed.

Manner of Feeding, &c.—A "play of gulls," as it is called upon the coast, and which in summer we daily witness in the vicinity of the great breeding stations—often from the summit of ranges of majestic cliffs, whence we gaze upon a great expanse of ocean—is a most lively and beautiful spectacle, and a suitable subject for the graphic pen of the author of 'Wild Sports of the West.' To use his words—"We were bearing down to a glorious play of sea-birds, and I got a gun uncased to practise at the gulls. It was a curious and bustling scene. Above, thousands of these birds were congregated in a small circle, screaming and

* Thirty-five teal were killed in the morning by two shooters, eleven of which were brought down by an ordinary musket charge.

rising and dipping over a dense mass of fry, which appeared at times breaking the surface of the water. * * * The great body of sea-fowl appeared so much engrossed with their predatory pursuits, as to neither attend to the reports of the gun, or notice the approach of the hooker, until the boat's bolt-sprit seemed almost parting this countless host of floating and flying plunderers. * * * I fired, a solitary gull dropped in the water, and half-a-dozen wounded birds separated from the crowd and went screaming off to sea" (pp. 147, 148);—the observation displayed here is as good as the description. The preliminary action to a play of gulls, as witnessed at the Gobbins in June 1847, was thus described to me:—A few birds on detecting prey one-fourth of a mile from the cliffs gave a shrill cry, when instantly those seated on their nests, and others on wing about the cliffs, poured down like a snowy torrent to the spot, each uttering the same shrill cry as that which had called its attention to the place of prey.

But this bird's mode of feeding is often commonplace enough. As already mentioned, it rejoices, even where fish are to be had for the catching, as at the Horn, in the tender flesh of young rabbits. In Belfast Bay it is accused—of what we know the great black-backed gull to be guilty—of attacking wild-fowl, more particularly wigeon, which have been severely wounded by the shooters. One was seen to attack a young cod-fish, of a few pounds weight, in Larne Lough, and on another occasion to strike at and cut, as if with a knife, a large sea-trout taken in a net. Mullet (*Mugil chelo*) captured there are much injured and sometimes rendered unsaleable by pieces being eaten out of them by the herring-gull.* It eats fragments of horse-flesh, separated from the carcase, on which, however, it does not alight, like the crow. Most commonly it feeds on minute univalve mollusca (*Rissoæ, Lacunæ, Littorinæ*) and crustacea, with occasionally vegetable matter. On this subject, I shall only add that a stomach examined by me contained the remains of two crabs (*Hyas araneus*), one of which

* This bird is accused in the *Ayr Advertiser* (Aug. 1849) on the authority of the proprietor of Rankinstone, parish of Coylton, of attacking and killing young lambs in the lambing season.

was four inches and a half broad to the points of the toes on either side. A bird shot at the Giant's Causeway, was, excepting a small *Idotea*, filled with univalve mollusca, portion of a *Patella cærulea*, a few small whole shells of *Littorina rudis*, three small perfect specimens of *Purpura lapillus* half an inch in length, and about seventy examples of the inner central column of full-grown individuals of the same species.*

The circumstance of gulls retiring from the sea inland at a particular time of the tide, and resting among the heath, is agreeably noticed and accounted for by Mr. Lawrence Edmonston, of Zetland, in one of his very interesting and well-written papers in the 'Edinburgh Philosophical Journal' (vol. vii. 1st series, 1822), entitled "Remarks on the *Larus parasiticus*, &c." I have observed limited numbers of the gull under consideration, to do so about wild breeding-haunts, as Horn Head, &c. From Belfast Bay, however, whence herons, curlews, and other grallatorial birds retire during the time that the tide covers the mud banks, neither the herring nor other gulls leave it. They are content to float upon the rising waters, and to fall with them until left upon the banks again. The herring-gull frequents inland lakes; in the autumn as well as winter I have observed it about Lough Neagh, &c.

A gull of this species, captured on the Mew Island, lived, according to my informant (its captor there), nearly twenty years at the inn of Donaghadee, where, after having been eighteen years, it laid two eggs.† Dr. Harvey, of Cork, stated in a communication to the 'Zoologist,' dated June 17th, 1846 (p. 1395)—"My friend, Robert Parker, Esq., of Carrigrohan, in this neighbourhood, has had a pair of herring-gulls (*L. argentatus*, Lin.) in confinement since they were taken from the nest, now three or

* Dr. J. L. Drummond has remarked to me that of all the native birds dissected by him, the gulls had the most orange-coloured fat.

† Montagu, in the Supplement to his 'Ornithological Dictionary,' gives a most interesting account of a herring-gull which, at the date of his writing, had been thirteen years in his menagerie. Mr. Hewitson, on the authority of the Rev. W. D. Fox, gives an instance of one of these birds daily visiting a garden at Colbourne, Isle of Wight, for thirty years, and continuing to do so at the date of publication.

four years. They have built near a pond in his garden, and are now hatching: there were two eggs when I saw them. If any one approaches the nest, the bird which is not sitting immediately comes to the assistance and defence of its mate. They are in beautiful plumage, adult, with the exception of a little mottling, which remains about the flanks." Mr. Hodder, who lives on the coast of Cork, opposite the islands called Reannies, had a pair of herring-gulls which bred and produced three or four young; no eggs were laid until the fourth year. These gulls were kept in a yard with fowls, and their nest was made in the fowl-house. Soon after bringing her young to maturity, the female was accidentally killed.

Mr. R. Warren, jun., of Castle Warren (county Cork), supplied me, in March 1850, with the following note on a herring-gull. "In July 1848, I brought it and two others from the Reannies when quite young and unable to fly. As this was the finest bird of the three, I never clipped its wings, but kept it in the farm-yard with the others and the poultry, where it remained quite contented, and showed no symptoms of a wish to fly away until the 19th of August, 1849, when a flight was taken into one of the neighbouring fields. It remained until the evening there, and then flew towards the sea, but returned next morning to be fed. This bird continued to go and come regularly for about a week, when it disappeared altogether, and I was afraid had met with some accident; but on the 14th of December, I was agreeably surprised by seeing it flying over the yard, and on my calling Jack, to which name the bird answers, it alighted on the roof of one of the out-houses and began crying for food. I threw it a bit of meat, which was instantly swallowed, and then it flew away. Next morning it came back, and on seeing my other gulls in the yard, alighted with them, and remained until dusk, when it went off to roost somewhere. It continued to act thus until the 23rd of the same month, when it took flight, and did not return until the 4th of January, but has continued its visits pretty regularly since. During the night it never remains, but flies off in the evening towards the sea. This bird is very tame, and will take a

bit of meat or bread from my hand. It shows great adroitness in seizing food on the wing, and I sometimes amuse myself by obliging it to do so, for on throwing a bit of bread into the air, the gull flies up, and always catches it before reaching the ground."

Mr. Selby notices "the comparative rarity of the present species upon the Northumbrian coast, where, however, its place is amply supplied by the lesser black-backed gull" (p. 505). Sir Wm. Jardine, too, describes it as "perhaps more local, scarcely so abundant," as *L. fuscus*. Montagu remarks, though without naming localities, that "there are fifty herring-gulls to one of the lesser black-backed, and five hundred at least, perhaps a thousand, to one of the larger black-backed gulls (Supp. Orn. Dict. under Herring-Gull). His observations, however, were chiefly made on the south-western and western coast of England. On all parts of the Irish coast which I have visited or had communications from, the black-backed species were in very limited numbers, compared with the herring-gull. In the north and east of Ireland, where the gulls have most frequently come under my own observation, there certainly is not one *L. fuscus* for a hundred, perhaps not for two hundred, of the *L. argentatus*.

Around the whole maritime cliffs of Ireland, the herring-gull is, in the breeding season, the most common species, being much more widely distributed than the kittiwake; generally a few of the lesser black-backed, and more rarely of the greater black-backed, nidify in its grandest haunts, still more seldom the common gull. I have never heard of the herring-gull breeding around the Irish coast elsewhere than on cliffs, except in the instance already mentioned, and never about fresh water;—the black-headed and lesser black-backed species only frequenting its vicinity.

During winter also, the herring-gull is, at least next to the *L. ridibundus*, the most common species on such shores as are known to me; and in some localities is more frequent than that bird. Indeed, when visiting different islands of Strangford Lough, on the 22nd of June, 1846, this was the only gull we saw all day, though it has no breeding-place near;—a flock of about

thirty adult and young appeared on a low rock, and at another place a few were seen.

In the month of August 1826, I met with both young and old herring-gulls on the eastern and western shores of Italy, and in June 1841, at a high rocky islet near Paros.

The following communication which I made to the Zoological Society of London in 1835, is here copied from the 'Proceedings' of that year, p. 83:—

"Having lately submitted six mature specimens of the herring-gull of the north of Ireland to a critical examination, similar to that pursued in the second volume of the 'Northern Zoology,' by Mr. Swainson and Dr. Richardson, I ascertained their identity with *L. argentatoides* of that work (vol. ii. p. 417). The largest and the smallest of these specimens differed in total length from 22½ to 24½ inches, and in their tarsi from 27 to 32 lines. The second quill in two individuals exhibited, in addition to the white tip, "a round white spot in its inner web," in this respect agreeing with the *L. argentatoides*, as described in the 'Northern Zoology,' and previously by C. L. Bonaparte, in his 'Synopsis of the Birds of the United States' (Ann. Lyc. New York, vol. ii. p. 360); the second quill in three of the others wants this white spot, in which particular it agrees with that of the *L. argentatus*, as contradistinguished by Bonaparte from the *L. argentatoides* (*vide* as above): the same quill on the sixth specimen is in an intermediate state, a round white spot not more than one-eighth of an inch across, appearing on it in the one wing, the second quill of the other wing in the same individual exhibiting a white spot fully half an inch in diameter; thus proving that this marking is so inconstant that it should not be relied on as a character."

I have been pleased to see that *L. argentatoides* does not appear as distinct from *L. argentatus* in the Prince of Musignano's Comparative List of the Birds of Europe and North America, published in 1838. M. Temminck considers the two names to apply but to the one species ('Manuel,' part iv. 1840).

Notes on the Gobbins and Lambay, with a Description of the Manner of Descending Rocks for Birds and Eggs.

When visiting, in May 1849, the range of cliffs, called the

Gobbins, attaining to perhaps two hundred and fifty feet in elevation direct above the sea, and situated just outside the northern entrance to Belfast Bay, I obtained the following information on the subject of birds breeding there. The *sea-birds* which now do so annually are the razorbill and guillemot, both numerously, but becoming gradually scarcer; the black guillemot (about twelve pair); the lesser black-backed gull (four pair); and the herring-gull (probably a thousand pair). The common cormorant bred there regularly until 1844, but not since. Puffins and kittiwakes (the former seldom) appear on the sea about the rocks, but do not breed. Of *land-birds*, peregrine falcons have an eyrie there, and several pair of kestrels nidify. One pair of ravens, numbers of grey crows, and still more of jackdaws, annually build, as do a colony consisting of some hundred house-martins. A pair of choughs had a nest annually until 1847.

The species reported to me as breeding at the cliffs of the island of Lambay, off the Dublin coast, in 1850, were puffins, razorbills, common and black guillemots, common and green cormorants (*P. carbo* and *P. graculus*), greater and lesser black-backed gulls, herring-gulls, kittiwakes, and Manx shearwaters.* In 1849, the lesser black-backed gull was not observed there, and of the greater (*L. marinus*) there were three pair; herring-gulls and kittiwakes were very numerous. The raven's nest was thrice robbed of six eggs; and four of the shearwaters were taken from the holes in which their nests were placed and wantonly destroyed by boys.

I shall here notice the different methods I have witnessed on the coast of Ireland of descending steep rocks for birds or eggs. At the Gobbins, a "climber" (alluded to at p. 357) has been going down the rocks occasionally in the season for above thirty years, and has a monopoly of the aerial exercise in consequence of being the only person in the vicinity supplied with a rope for the purpose. His preparation was the work of a moment:—throwing his shoes off, and a noose of the rope over his head, so as to embrace his body beneath the arms, down he dropped from the summit, with

* Mr. R. J. Montgomery.

much less concern than a lady steps from her carriage. Two or three men (generally his two brothers) "give out" the rope, of which a coil is left back, some little distance from the summit of the cliff. They keep it tight, until the egg-gatherer reaches the ledges containing the nests, when he gives a signal to slack it. The liberty thus afforded him to move to either side prevents the necessity of shifting the rope laterally at the summit of the cliff, where it is kept to the same place all the time. On descending, he takes hold of the rope with his right hand, grasping it as high up as he can reach. He goes down sideways, keeping his feet against the precipitous cliffs the whole way, and stopping at each narrow ledge to pick up the eggs or young. These are placed in his highland bonnet, which is kept on his head until the plunder commences. After bringing up his bonnet three times filled with eggs and young, at the same number of descents, each occupying a few minutes, he ceased. Holding the rope must be very tiresome on the arm. When the latter became fatigued, he shifted the noose to the opposite side of his body at the next ledge, and took the rope in his other hand.

Mr. Waterton describes the method adopted on the coast of Yorkshire;* but that pursued at the Gobbins (one rope only being used) is much more simple and effective. The man here signified his wishes to those above by calling to them or by jerking the rope. By throwing his head and body as far back as possible from the rocks, while his feet, clad in stockings only, were planted against them in his descent, the rope was prevented from coming in contact with the rocks, and breaking pieces off that might injure him in their fall. When any loose fragment is perceived during his descent, he pushes it down with his foot, lest it should afterwards by any chance fall on him; but the rope very rarely touches the face of the rock, so as to endanger him by bringing down such pieces.

The manner in which the gamekeeper at the Horn went over the rocks to the eagle's eyrie was similar to that adopted at the Gobbins.

* Essays Nat. Hist. vol. i.

In Vol. I. p. 73, a climber is noticed as ascending the cliffs from below to a buzzard's nest, while he was secured from falling by a rope about his body, held by persons above.

The method adopted at Arranmore—the largest of the islands of Arran off Galway Bay—was different.* When Mr. R. Ball and I visited that island in July 1834, a rock-climber—a tall athletic fellow—so far intruded himself upon us when we were walking towards the cliffs as to come up behind unheard in his "pompootees,"† and spring high into the air for a few paces past us in proof of his agility. We soon put this further to the test by having him lowered over the loftiest limestone cliffs of the island, perhaps five hundred feet in height. His manner of descent was free and easy. He sat upon a stick, about a yard in length and two inches in thickness, to the middle of which one end of the rope was fastened, the other being held by men above. When coming near his prey, he held the rope in one hand, and with the other threw a noose fastened to a rod round the birds. Several gulls so taken were brought up. When over the cliff, he took pleasure in exhibiting himself, springing as far into the air from the surface of the precipice as he could do without injury to himself from the rebound.‡ He likewise performed various antics,

* The description of Arranmore in O'Flaherty's 'West or H'Iar Connaught,' written in 1684, p. 67, contains the following passage:—

"Here are birds which never fly but over the sea; and therefore are used to be eaten on fasting-days; to catch which, people goe down, with ropes tyed about them, into the eaves of cliffts by night, and with a candle-light kill abundance of them."

To the preceding, the editor of the work adds:—"The height of the cliff at *Dun Ængus*, in Arran, which *Dun* is one of the most remarkable remains of pagan antiquity in the west of Europe, is upwards of three hundred feet" (p. 66).

† Sandals of cow's hide, exhibiting the hair outside, are worn by the islanders, and the mere single skin (at least in those seen by me) used as sole. They are worn over woollen stockings, and fastened by one or two strings across the foot. They look singular on large stout men, and last only from three to six weeks. The wearer can tread quite noiselessly, without any of the intolerable creaking so often heard from what are considered more civilized foot-gear. I have been present when an actor of some note, with his feet clad in creaking dress-shoes, played the Ghost to the elder Kean's Hamlet, and apprised the audience long before he actually appeared, of his "entrances," and by the same means gave token for some time after his "exits," that he had not yet vanished into thin air.

‡ Further detail in a similar case will be found most graphically narrated by Mr. James Wilson, in his account of St. Kilda, published in his interesting 'Voyage

and with the stick as a seat, looked, comparatively with others in similar situations, quite comfortable and at his ease.

We were too late (July 8) for many eggs being taken; but on the 13th of June in the following year my companion again visited the island, and had those of the herring-gull, razorbill, guillemot, cormorant, and oystercatcher brought up, all of which are there considered good for eating.* The egg-gatherers told me that they take six kinds of eggs;—perhaps those of the kittiwake, in addition to the five already named.

THE LESSER BLACK-BACKED GULL.

Larus fuscus, Linn.
„ *flavipes*, Meyer and Wolf.

Is found around the coast, at inland lakes, &c., and is resident.

This species is met with in very limited numbers about our more northern coast, where it has chiefly come under my observation, and at no marine locality am I aware of its being more than sparingly scattered. Compared with the herring-gull it is very scarce. I have only known it to frequent the grandest of the breeding-haunts of that bird, and these in very limited numbers. At the Gobbins, where several hundreds of the herring-gulls nidify, two pair of this species bred in 1830, and a man well acquainted with the birds frequenting this range of rocks, stated that never more than one or two pair bred there. During a walk along the top of the cliffs in June 1834, I saw but one of these birds (an adult), though hundreds of the herring-gulls appeared. Ornithologists visiting those rocks, in June 1847, saw about six pair of

round Scotland and the Isles.' Several men lowered over the cliffs there at the same time were observed from the sea.

* Eggs of the herring-gull, razorbill, and guillemot were exposed for sale in Dublin in 1848, and sold for twopence each.

the *L. fuscus*, and one bird, which was shot, though not quite adult, was believed to be breeding:—in the same month of 1849, three or four pair were observed. The man who descends the rocks stated that just four pair had nests on each of the preceding twenty years. Although this testimony varies (I know not on whose opinion most to rely), it is of little consequence, as all is to the effect—that but few birds are there.

The gamekeeper at the Horn (Donegal) assured me in June 1832, that both the greater and lesser black-backed gulls breed there on the lofty precipitous rocks, and that the latter "makes a nest like a hen, laying three eggs of a brownish-green colour, with black ticks:" the eggs of the two species were said by him to differ only in size;—a remark somewhat corroborative of his accuracy. I myself observed this bird to be very scarce there comparatively with the herring-gull. In June 1834 we met with the *L. fuscus* on the coast of Connaught; and I was told by the late Mr. T. F. Neligan in 1837 that he had found its nests and those of the herring-gull so abundant on a low rocky islet off that county that he could scarcely walk without treading on their eggs: the *L. fuscus* was more numerous there than the *L. argentatus*—their eggs were carried away in quantities for food. My informant saw on the islet numbers of pellets composed of the remains of shells which he imagined the gulls had disgorged. On that coast, a black-backed gull (*L. fuscus?*) breeds at Muckalow rock, where it was the only bird of its genus seen one day in 1850, when about thirty of its nests were observed. At the Magharee Islands, perhaps one lesser black-backed to two herring-gulls appeared—about Dingle, there are but a few for large numbers of *L. argentatus*—a remark applicable to them at the lesser Skellig rock, and on the coast of Kerry generally.*

In June 1849, a small colony of eight or ten pair was observed on the largest of the Sovereign Islands, near the harbour of Kinsale; several of their nests were found on the grass and on ledges of rock:—they were formed of a little dried grass.† These gulls

* Mr. R. Chute. † Mr. R. Warren.

are believed not to build in company with the herring-gulls on the cliffs between Cork and Kinsale. This, if correct, would agree with my own observation in the north of Ireland, that the lesser black-backed gull only frequents the greatest breeding-haunts of that species. For instance, it is found at the Gobbins, where from 1,000 to 2,000 pair of those birds nidify, but not one have I ever seen about a nest at the ranges of cliffs in the vicinity of the Giant's Causeway or Downhill, where the *L. argentatus* is more scattered and in much smaller numbers; nor is it named as building in Rathlin. About Youghal, adult birds have been observed in the breeding-season.* They nidify in the cliffs near Howth (county Dublin), and, as has been supposed, also at Lambay; but in the summer of 1849 none bred there.†

I have never observed this bird so abundant anywhere in Ireland as at Lough Neagh, where from the people believing that it subsists on the *Coregonus Pollan*, it is called the pollan gull, or Lough Neagh herring-gull, from the names applied to this fish. When visiting the breeding-haunt of the black-headed gull and common tern at Ram's Island in this lake, on the 15th of June, 1833, we shot an immature bird of this kind and saw about thirty which kept aloof from the other species; they were stationed on the very small detached rocks or heaps of upraised gravel, which stretch into the lake from the promontory occupied by their congeners. Our boatmen, and the serjeant in charge of Ram's Island, stated of their own knowledge, that this bird rarely bred here, but they had found its nests occasionally near the outer extremity of the present haunt of the black-headed gull: the eggs were known from those of the latter species by their superior size. I observed at Massarene deer-park bordering this lake, on the 23rd of September, 1834, not less than forty mature lesser black-backed gulls congregated together on the beach; and remarked old birds about different parts of the lake again on the 29th of May, 1836, and 12th of the same month, in 1838.

* Mr. R. Ball. † Mr. R. J. Montgomery.

While spending nearly a week at this lake in 1846 (in company with the distinguished entomologist A. H. Haliday, Esq.) I saw these gulls to great advantage. From the sandy beach at Shanescastle Park, on the 1st of August, a "play" of them was witnessed, just as we observe that of herring or other gulls at sea, and the birds in similar numbers;—after they alighted on the water, I reckoned about 120 together. When in a body, and also singly, they uttered a loud cackling laughing cry. Some were adult, but by far the greater number immature: fine old birds singly as well as in pairs came majestically sailing above the lofty tree-tops towards the lake. Near Toome, on the following day, they covered over the sands in numbers, such as we see other gulls do on the sea-shore; there were about three hundred in company; many curlews and eight or ten herons were beside them, imparting quite a marine aspect to the scene.

Leaving Ballinderry (county Derry) on the 5th of August, in a boat, for Ram's Island, we saw a great number of these gulls assembled along the margin of a small islet near the place of our embarkation, as we did again about the rocks off Ram's Island; not less than one hundred and fifty in each place. We were told that not a pair bred at the latter locality, this year, on account of their place of nidification being inundated: the keeper said that probably not less than two hundred pair bred here last year. This will account for the numbers of these birds which appeared about the lake, where they and the black-headed were the only species I was sure of seeing on this occasion. In crossing the lake to-day, we took eleven pollans, all but one of full size, floating on the surface alive, but with wounds in their bodies, which the boatmen said were made by these gulls. Seeing one of them and a pollan floating before it, we rowed up in the hope of having proof of the evil-doer; but in this instance the fish had been injured in a net. The holes appear as if made by the gulls' beaks, and any part of the fish is evidently struck at random. There is a common accusation at this lake against lampreys—I know not how true—for "making holes" in the bodies of various species of fish and destroying them.

May 4th, 1850. A fisherman at Derrywarragh island, Lough Neagh, told us that the common tern, black-headed and "pollan gull," used to breed on Coney Island, off Maghery Bay, where he had seen their eggs. For the last two years, however, they had not done so owing to a family living constantly on the island, and the children disturbing the birds. We remarked the two species of gulls about the lake to-day, assuming immature birds to be more probably *L. fuscus* than *L. argentatus*. A party visiting Ram's Island on the 4th of June 1850, saw about twenty of these gulls in various stages of plumage seated on the stones adjacent to the island, but they could not find any of their nests, nor obtain information respecting their breeding there. On the 12th of the same month, a few were seen about Toome, and a boatman stated that they formerly bred on Scawdy Island, but do not now.*

In the island at Lough Conn (Mayo), already alluded to as a breeding-haunt of the black-headed gull, not less than a dozen nests of the lesser black-backed species were observed in 1840 or 1841.† When on the borders of Lough Carra, in the same county, on the 4th of July, 1834, an adult bird flew within a few yards of us.

I have often remarked the partiality of the lesser black-backed gull to ascending rivers as well as to visiting inland lakes. One, two, or three of these birds may be seen occasionally in winter, and daily in spring (in some seasons so early as February), flying tolerably high above the river Lagan, near Belfast,‡ and proceeding so far as the first fall above the sea, where the flow of the tide terminates, and the canal commences. Once only have I seen them farther up the river, when a couple of young birds appeared nearly two miles above tide-reach. They seem indifferent whether the tide be in or out, and I have very rarely observed them to stoop to the water for food. Immature birds are more scarce here than adults, which from the contrasted

* Mr. J. R. Garrett. † Mr. B. Ball.

‡ A fine adult specimen, shot in the bay here in August, and preserved for the Museum, was, in length 22 inches, breadth 4 feet 7½ inches, weight 2lbs.

snowy whiteness and fine black of their plumage, have a beautiful appearance with the dark foliage of the river-banks as a background; but sometimes both are seen in company. On one occasion, I observed an adult bird fishing as high up the Lagan as the first fall from the sea, while soon afterwards two immature birds flew up the course of the river until they joined him. They were no doubt the bearers of some particular intelligence, as immediately on their reaching the old bird, he wheeled about, and the three proceeded with their utmost speed down the river.* The first week in May is the latest time I have noted adult birds here, but the immature appear occasionally throughout that month and June.

On the 7th of July, 1835, I observed an adult pair of these gulls on the lake of Windermere, and on the 16th, saw one at the bridge in the town of Lancaster.

In the middle of May 1841, I noted *L. fuscus* as seen at the Dardanelles, and some days after, numbers as congregated together on the shore of the Bosphorus. These were set down as *L. fuscus*, without a mark of doubt, but I now feel uncertain respecting their species, as it is stated in my journal that a gull, the size of *L. canus*, and the colour of *L. fuscus*, is common at Constantinople, and so tame, that it will hardly go out of the way of the boatmen's oars. They so habitually alighted on the house-tops, that I thought probably they had nests there. This is doubtless the gull alluded to, but not named, in the following extract from the fourth part (1840) of Temminck's 'Manuel,' &c., p. 472:—"On trouve sur les côtes de Barbarie et en Syrie, peut-être aussi en Égypte, une mouette d'un quart moins grande que *flavipes* [*L. fuscus*], et à bec de beaucoup moins fort relativement à la taille; mais coloré exactement comme *Larus flavipes*." Degland's 'Ornithologie Européenne,' published in 1849, does not contain any information on this species.

* In like manner, I once observed several of the black-headed gulls feeding in a ploughed field half a mile from the shore of the bay, whence a single bird flew direct to them; the moment it arrived they all wheeled about, and with their best speed made for the bay, where it was low water at the time; they were not in any way alarmed in the field: the courier seemed to convey some special news.

THE GREAT BLACK-BACKED GULL.*

Larus marinus, Linn.

Is found around the coast throughout the year.

A FEW only of this species appears to breed upon the coast of Ireland. Mr. J. V. Stewart, when living not very far distant from Horn Head, has known it to build on inaccessible places there, and once saw its nest on an insulated rock. More of the greater than of the lesser black-backed gull were said, by the gamekeeper, in 1832, to build there.† On the 9th of July, 1834, we saw several of the adult *L. marinus* about the lofty cliffs of Arranmore, off Galway Bay, and had no doubt of their breeding there. On the Kerry coast, a few nidify on the Magharee Islands, the cliffs about Dingle, and the small Skellig rock.‡ At Lambay Island, off the Dublin coast, three pair had nests in 1849.§ At various other localities a few pair must build; but a very small proportion of those seen in autumn and winter upon our coasts can be bred in the island.‖ Without any reference to nidifica-

* The only provincial name mentioned by Montagu is *Cobb*, which he says is applied to the bird by the fishermen on the coast of Wales. This name is also used at Dublin, Wexford, Waterford, &c. Carrion gull and great saddle-back gull are names also in use. It is called in Sussex "Parson Gull, from a supposed resemblance in the arrangement of its black and white plumage to the hood and surplice of a clergyman." —Knox.

† "During a walk round all the cliffs of the Horn, on the 1st of August, 1850, the lesser black-backed gull was not seen, but several of the greater rose up from the abyss below, and soared above our heads."—Mr. Robert Taylor, of Belfast.

‡ Mr. R. Chute. § Mr. R. J. Montgomery.

‖ The breeding-places in Great Britain and the adjacent islands which I have seen named may be here brought together. They are "Souliskerry, a small flat islet about thirty miles west of the Orkneys" (Bullock)—in a few of the islands of Orkney and Shetland it breeds in abundance (Hewitson)—at the Bass Rock, Frith of Forth, a few pairs breed (Selby and Jardine)—on the South Stack, off Holyhead, two pairs breed (Stanley, 'Fam. Hist. Birds,' vol. ii. p. 244)—"Steep Holmes and Lundy Islands in the British Channel" (Montagu, as informed by fishermen)—about the estuary of the Thames, in Kent and Essex, it is a "marsh breeder" (Yarrell)—in islands on Loch Laighal, Sutherland (St. John, vol. i. p. 41).

The gamekeeper at Islay, in 1849, considered that both the greater and lesser black-backed gulls breed annually at a rocky islet about half a mile to the north-east of Kinrevock—the great breeding-haunt of the common gull.

tion, we are told that this bird is by no means rare about Cork Harbour,* and that it may be considered the most common of the larger gulls frequenting the harbour of Wexford, where it is not "very wary, generally flying over or near boats that lie in its course."† I have never myself visited a range of coast on any side of the island, without this bird coming under view.

Mr. R. Ball has remarked to me that—"immature specimens of *L. marinus*, or at least supposed to be so, are very often considerably taller, and have larger bills than the adults. Is there a second species, or is there a real decrease in bulk?" Two specimens in the University Museum, Dublin, examined by that gentleman and myself, exhibit this difference in a very marked manner in the tarsi; those of the young being two inches ten lines; of the old two inches five and a half lines in length. The wing of the young from the carpus to end of longest quill is twenty inches, of the adult eighteen and three-quarters; the middle toe and nail of the former are two inches ten lines; of the latter two inches nine and a half lines. In different species of gulls I have remarked young birds of the year as having larger tarsi and bills than the old, but did not ascertain whether such large young were invariably of one sex, and such small old invariably of another;—this should be looked to. Three immature individuals of the greater black-backed gull shot at the end of December (1833 and 1837) and the dimensions of which I noted were

	in.	lin.
Length (total) of a female bird	27	6
„ of bill from rictus to point	3	$7\frac{1}{2}$
„ of wing from carpus to end of first quill . . .	19	0
„ of tarsus	3	0
„ of middle toe and nail	3	3
Breadth across wings	52	0

Irides white; legs pale flesh, and bill blackish horn-colour.

Of the two others (sex not noted), the one was in length twenty-eight inches; wings passed the tail; the other was twenty-nine inches in length; wings passed the tail one inch; extent of wings five feet.

Mr. Poole mentions a bird which he killed in Wexford Harbour on the 26th of November, being in perfectly adult plumage, except the

* Dr. Harvey. † Mr. Poole.

tail, which was beautifully mottled with black and white. I have in different instances remarked this very handsome appearance.

Belfast Bay.—The greater black-backed is much more frequent here than the lesser black-backed gull, which would appear from works upon the subject to be by far the more common species of the two everywhere in England and Scotland. It should perhaps rather be said that *L. fuscus* is rare in this estuary, than that *L. marinus* is more common than elsewhere, but the following details will afford data on this point. Here old or young of this species may be seen almost every day of the year, the former at all times except in the breeding season, and the latter even then. The period of their leaving for nidification is late. On the 5th of May, 1832, I saw several, and on the 2nd of that month, in 1838, observed two adult and five immature birds in company.* On the 30th of June, 1842, three or four adult birds appeared in the south-western side of the bay, and for an extent of a few miles, only two or three gulls of any other species: the *L. marinus* is often to be seen in the breeding season, when other gulls are very scarce. Such birds as those last mentioned may be considered as not breeding. At the Copeland Islands too, about the middle of June, I have remarked two or three adult birds, which should be brought under the same category.

But from September (and some time early in the month) until May, the greater black-backed gull is daily seen in Belfast Bay from the road on either side, near to which it is driven by the flowing tide, for it prefers standing on the beach to floating on the waves. Along with groups of other gulls, but generally a little apart from them, and at a respectful distance from each other, a pair, usually—(from which circumstance it is probable that the species is monogamous)—or four adult birds will be seen. The group at the outskirts of which they appear consists daily of the more sociable *L. argentatus*, *L. canus*, and *L. ridibundus*—of

* A fine adult bird which was shot in Dublin Bay on the 21st of May, came under my examination (1838). On the 6th of May, 1841, I saw one in the harbour at Syra (Archipelago).

L. rissa in its season, and rarely of *L. fuscus*. Montagu remarks, in his 'Ornithological Dictionary,' that "they never herd with other gulls;" and here certainly the others rather herd with them, or alight where they see them stationed. Rarely, I have seen them surrounded by gulls of other species, but these had doubtless been the latest comers. Wherever the *L. marinus* alights to await the receding of the tide—and he generally selects a place from which the flowing waters will not drive him—he remains, regardless of prey, though the others may be busy feeding around him. They are sure, too, to fly off to the exposed beach before he leaves the station where he had so long remained, statue-like, in dignified composure. When grouped around or near him, I have never known this bird molest any of his weaker brethren of the *Laridæ*. More than four adult individuals are seldom seen on a stretch of coast of from two to three miles; immature birds generally appear near them on the ground, and are more numerous, but in flight do not accompany them. The most that have come under my notice were observed on the 18th April, 1832, when, within a mile and a half along the south-west of the bay, several appeared scattered along the shore, and in one place about fifteen were together in a small close flock; outside of which a few dotted the beach. The number and compact body—for even two rarely stand very near each other—indicated their being on migration. They are generally quite silent when seen in the manner described. Once, however, when on horseback and a mile distant from them, I was attracted by the loud and hoarse cackle of a pair, caused by a third individual making its appearance. It subsequently alighted beside them; when, as if in anger at their demesne being encroached on, they took their departure, leaving the stranger alone. Their call, continued on wing, was so loud that it could certainly have been heard for fully three miles along the level strand.

These gulls not only commit great havoc on wounded birds of all kinds, especially wigeon and other ducks, but sometimes bear down upon and carry them off before the shooter can reach the

spot to which his shot was directed:* occasionally, too, they, falcon-like, strike down birds out of a flock. Bell, an observant shooter, once saw a gull of this species strike a wigeon from a flock to the water, bear down upon and make the bird its prey. Wigeon show great alarm when this species or the herring-gull comes flying towards them, and a whole flock will take wing in consequence. Thus are fowlers often foiled of getting shots when "making up" to those birds. The diving-ducks, not so timid as the wigeon, and naturally taking refuge beneath the surface, are less alarmed at their presence. All shooters detest these gulls for depriving them of shots.† The two species regularly frequent a portion of the beach near Belfast, called the Long Strand, for the purpose of feeding on the carcases of horses, of which it is always more or less redolent, and when so engaged have both been killed at the same shot.‡ Dead pigs and offal of all kinds afford them a pleasing variety of viands. Such attractions may account for the more than usual numbers of *L. marinus* in this bay. The manner of feeding adopted by these and other gulls should be mentioned. Instead of remaining perched on a carcase like an eagle or falcon, and tearing the flesh upwards, the gulls lay hold of a piece, which, if it does not at once yield to their

* Daniel was aware of this; in his 'Rural Sports' it is remarked that "the large black and white gulls are most expert in immediately descrying the wounded birds, and are so determinedly ravenous that in a very few minutes they will devour all the fleshy parts, such as the breast, &c., of a wild-fowl, although the punter may be using all his expedition to prevent them" (vol. iii. p. 283).

† In like manner we are told that "to the seal this bird [*L. marinus*] is of essential service. It is the custom of these animals to lie upon the rocks for hours in succession, and so well acquainted are the natives with their haunts that they raise small bulwarks to conceal their approach. This gull, however, frequently frustrates all these precautions by sounding the note of alarm, thereby informing the seal that danger is close at hand, and if the latter is not disposed to avail himself of this friendly intimation, they will frequently strike them on the head with their feet: when the seal retires into the water all further care on their part ceases, as they consider him then in a situation to protect himself; but should he appear again within gunshot of the place he has left, the gull will dart down at him, and frequently splash the water in his face, as if to threaten him for his temerity."—Dunn's 'Ornit. Guide to Orkney and Shetland,' p. 111.

‡ The adult *L. marinus* is difficult of access to shooters, but I have, when riding on the sands, approached them so nearly as to see plainly the yellow spot on the bill: they often disgorge before taking wing, and sometimes even when not alarmed. Immature birds not unfrequently come flying within range of gunshot.

bills, they secure by running backwards, thus bringing the whole weight of their bodies to bear against it. A very correct observer, who has often witnessed the banquets on dead horses here, reports how the various guests sat or rather stood at meat, and deported themselves the one towards the other. The raven, carrion crow, and grey crow, fed at the same time in company with dogs, though quarrelling occasionally with the little ones. The gulls—great black-backed and herring—never ate in the society of the dogs, but walked off on their approach to a little distance, with their necks stiffly borne, marking their displeasure;—perhaps at such low company; mere walkers of the earth. The two species of gull and three of *Corvidæ* partook of the feast contentedly together. All this was a matter of almost daily occurrence.

The great black-backed and herring gulls sometimes pursue individuals of their own species, to make them deliver up choice food too large to be immediately swallowed. They occasionally give each other severe chases, each trying to keep uppermost. If the first drop the food, this is picked up by the second, which in its turn becomes the pursued. But a most impudent proceeding witnessed here was a black-backed gull taking a fluke (*Platessa flesus*) from a cormorant, when in the act of swallowing it. The cormorant, which was on the water, endeavoured but in vain (owing to its breadth), to swallow the fish, before the gull relieved it of the booty. He rose upright in the water, and made a fierce snap with his bill at the gull as the latter went off with his prey. This species had often before been seen making such attempts, but always unsuccessfully, owing to the cormorant's diving. *Strangford Lough.*—Here the black-backed gull has been seen more than once to strike down a wigeon from a flock. Brent geese, as well as wigeon, even when swimming in very large bodies, a thousand or more in number, rise to wing when either a single black-backed or herring gull appears overhead! When brent geese were killed by a shoulder-gun from the islands, these gulls, despite the loud shouting of the fowlers, succeeded in carrying some off before the dogs by swimming, or the men by taking to their boat could reach the spot. Tame

ducks, that feed in the tide at Rough Island, and domestic fowl, when at a distance from the house, take wing homeward when the *Larus marinus* appears in sight, though with gulls from the *L. canus*, down in size, they feed in company.*

Larne Lough, December 1846.—In the mornings here, a few of the great black-backed gulls usually go over the lough, taking a survey for dead or wounded wigeon, &c. Of seven of these birds killed or wounded at a shot from a swivel-gun, one was carried off by a *L. marinus*, and two nearly eaten by grey crows, by the time (rather longer than usual) that the fowler reached the spot. In another instance this month, a wigeon was seen to escape from one of these gulls by diving very frequently;—whenever a stoop was made at it on the surface of the water. The best guide that the fowlers have here to their wounded birds is this gull, and it is a common remark—"There's the black-backs, we'll see if there's any wounded birds." The chase of a wigeon by one of these gulls was so long and close throughout, that it was considered by the spectator equal to any he had ever seen by a hawk, though there were certainly fewer turnings. One of these adult gulls was observed here to fly over a flock of about a dozen brent geese on the water. They arose, and the gull pursued them fiercely for some time, but without effect, as they were able to outstrip it in flight. The gull was very near them more than once, but the geese escaped, by suddenly wheeling to either side more rapidly than it could do. My informant had never seen brent geese, unless wounded, pursued by this gull before. Wigeon being laid out in an island of this lough to tempt these gulls within shot, while the fowler lay in wait, brought them to the place, though not within gun-shot, for they espied their enemy. The soaring of several of them—occasionally three at a time—directly above him, circling about, and turning their heads gracefully to look around, was described as a most interesting sight, while, all being adult, their plumage, viewed from the ground, appeared wholly of a snowy tint.

---

* Mr. Darragh, 1848.

I have occasionally (particularly in April and May) seen old as well as young birds ascend the river Lagan as far as the tide flows, but chiefly at low water:—a beautiful adult bird shot there on the 8th of April, 1837, at the docks of the canal, came under my inspection. An immature one, killed on Lough Neagh, has been brought to me. Mr. R. Ball mentions his having, in the spring of 1831 or 1832, fired at an adult bird, seated on a rock off Ireland's Eye. It fell into the water, where, after a considerable battle, in which his hands were repeatedly wounded, he captured it. On examination, it did not appear that his shot had taken effect, but there seemed to be an injury some days old, on one of its wings, which had probably been grazed by a bullet. The bird being tied up in a handkerchief, often contrived to get its head out, and seldom without managing to draw blood from somebody near. It was, however, safely brought to Dublin. On being enlarged in a room, and offered some cold meat, this was eagerly partaken of, and on the moment the bird became perfectly tame. It was placed in the Zoological Gardens, Phœnix Park, where it was for a long time an especial favourite, on account of its tameness and beauty. It recovered the power of flight, and used sometimes to go away for a few days, and return again. On one occasion it was observed to mount very high in the air, and fly sea-ward, after which it was never again seen. This gull was in the garden about two years.

The two species of black-backed gulls were remarked by the late Mr. G. Matthews and his party, to be about equally common along the coast of Norway in summer and autumn.

Audubon (vol. iii. p. 305) gives a very full description of this species, as observed by him generally, at breeding-stations, on ship-deck, &c.; and at p. 312 there appears in his work a most interesting history from the pen of Dr. Neill, of Edinburgh, of one of these birds kept in this gentleman's garden, and which, having the use of its wings, went off annually in the spring, as was supposed, to some breeding-haunt, but regularly returned for a long period of years to spend his winter in the vicinity of the learned metropolis, with the kind friend under whose care he was

brought up. In the third volume of Loudon's 'Magazine of Natural History,' p. 155, a pleasing account of a tame bird of this species will also be found.

THE ICELAND GULL.

Larus Islandicus, Edmonston (1822).
,, *leucopterus*, Faber (do.)*

Is only known as a bird of extremely rare occurrence on the coast,

But may, like the glaucous gull, be less rare than the very few preserved specimens indicate. What is said of the latter species relatively to *L. marinus*, equally applies to the *L. Islandicus*, compared with the *lesser* black-backed gull.

The Ordnance Museum contains an immature specimen, said to have been procured at Lismore, county Donegal, in October 1839, and a young bird was obtained in Tralee Bay in the winter of the same year (?).† An immature bird, which I purchased in a fresh state, was shot on the 20th of January, 1843, on the river Lagan, between the two bridges, close to the town of Belfast. This bird, though "in full possession of all its faculties," was so tame as to be within the reach of stones thrown by idle boys, and kept its ground, unless when struck by them; even then it flew but a few yards and again alighted. A casual passer-by, perceiving that the bird would be an easy prey, went for a gun and shot it.

On the 25th of January, 1849, one of these birds was seen by Mr. R. Warren, jun., flying in company with some herring-gulls, at Seamount, Cork harbour, and again on the 29th of the same month, close to the quay at Cove. On the 2nd of February, two

* Both these names were published in the same year, but I am not aware which preceded the other.

† Mr. R. Chute.

were remarked on wing amongst the shipping at that port; where another was observed on the 8th, and, on the following day, one appeared at Seamount. A bird in immature plumage was shot here by that gentleman's brother at the end of January, and presented to Dr. Harvey for his collection, by whom I have been informed that it weighed two pounds; agreed exactly in measurements and colour with those described by Edmonston and Selby, but the irides were "dark-brown," instead of "pale yellowish-grey." So much only can I at present say of the Iceland gull as an Irish bird.

In Charlesworth's 'Magazine of Natural History' for January 1838 (vol. ii. p. 5), I noticed this species as follows:—"Having been lately informed that a few rare gulls had appeared about Ballantrae, in Ayrshire, and that, after displaying for a season some interesting peculiarities in habits, one had been shot and preserved, I embraced my informant's kind offer of bringing it from Scotland for my inspection, on his recent return to this country. It proved to be the Iceland gull (*L. Islandicus*, Linn.), apparently in the stage of plumage which immediately precedes maturity. A professional gentleman at Ballantrae, into whose possession this bird came, and by whom it was preserved, favoured me with the following particulars respecting it, in a letter dated October 26, 1837.—'At the end of last year, three gulls, of the same kind, made their appearance on the shore where the fishermen reside.—Two of them were shot in the spring, and the one sent you, in June. As they frequented the fishing boats, the men used to supply them with fish; and in a short time they became quite familiar, took whatever was thrown to them, but would not allow themselves to be caught. They were never observed to go far from the place where they were first seen. The person who gave me this information shot the two in the spring, and says that every winter one or more are seen on the coast. He cannot say where they breed, but is sure there are none on the Craig [of Ailsa].' This indifference to the near presence of man, on the part of these northern strangers, reminded me of that of the first *Larus Sabini*,—also a native of the arctic regions,—obtained

on the British shores. The month of June seems a late period for the Iceland gull to remain in such a comparatively southern latitude; and there can hardly be a doubt that it is the same species which is seen about Ballantrae every winter, as the authority for the statement must evidently know it well from its congeners, when he correctly states that it does not breed on Ailsa Craig."

On the 2nd of April, 1840, the same kind friend (John Sinclaire, Esq.) brought me from Ballantrae a second specimen, which was shot there a few days before that time. It is in the same plumage as the former one, or in that which Mr. Selby describes after two general autumnal moultings have been undergone (vol. ii. p. 504). Mr. Sinclaire informs me that when at Brodick Castle, in the island of Arran (Frith of Clyde), many years ago, he saw about six or eight gulls, which he is certain were of this species, and in proof of his correctness gives the "circumstantial evidence" that they were almost as tame as domestic fowl, and were stationed on a manure heap before a still. Although on a very near approach they took wing, they returned immediately on the party going out of the way: he was told that they had frequented the place for a long time.

Faber's very full and interesting account of the Iceland gull, in his 'Prodromus of the Ornithology of Iceland'—a work difficult to be procured—is judiciously copied by Mr. Yarrell, in the third volume of his 'British Birds.'

The Iceland gull is said to be numerous in the high arctic regions of both hemispheres. To Iceland, even, it is only a winter visitant (Faber). It is in Scotland and England, as well as Ireland, a bird of only rare and occasional occurrence.

THE GLAUCOUS GULL.

Larus glaucus, Brunn.

Is occasionally obtained on the coast,

And is perhaps less rare than ornithologists generally imagine —as it requires to be seen near to be determined, in consequence of its resemblance to the *immature* great black-backed gull. This latter bird in its *adult* state, with black back, can be told unerringly at the distance of a mile or more on the beach, but among the birds which are considered its young, and which may be seen every day of the year upon our shores, the *L. glaucus* may be passed over. I speak of them as they appear at a distance. It may be said that but few specimens have been procured, but this would apply likewise to *L. marinus*, which, though daily seen, is generally (unless when young) too wary to be shot.

In Mr. J. V. Stewart's list of the birds of Donegal, published in the 5th volume of 'Loudon's Magazine of Natural History' (July 1832), the glaucous gull was, I believe, first noticed as an Irish species, and was marked "rare;" that gentleman has since informed me that he does not feel certain of its being resident, as mentioned in the published list. In the preceding month of March I had seen one of these birds in the shop of Mr. Glennon, Dublin, to whom it was sent early in the winter of 1831, from the west of Ireland: it agreed with the figure and description of Bewick's "young glaucous gull."

I have remarked in Mr. R. Ball's collection a specimen, killed at Youghal, in the autumn of 1833: it is more spotted and barred than the young herring-gull, and is believed to be a bird of the first year. The dimensions taken from the stuffed specimen are—

	in.	lin.
Length (total)	25	0
,, of bill above	2	2
,, ,, to rictus	3	2
,, from carpus to end of quills	17	0
,, of tarsus	2	6
,, of middle toe and nail	3	$1\frac{1}{2}$

Late in the month of July 1834 a second gull of this species was shot, near Youghal, by Mr. Ball, when I was in his company. On the 9th of that month he killed a third at the Islands of Arran (off Galway Bay), when we were together;—he has two of them preserved, and considers them in the plumage of the second year. In the Ordnance Museum are three specimens —one (young) from Strangford Lough, in December 1839; and two, one of which is adult, the other immature, from Moville, county of Londonderry. A young bird was caught on a spilliard in Tralee Bay about the winter of 1839, and early in the year 1847 a second was seen to the west of Dingle (by Mr. R. Chute), and a third in Cork Harbour (by Dr. Harvey). One, stated to have been shot on the coast of Galway, in September 1846, has come under my notice.* About a small rocky islet off Achil, immature birds are said to have been observed during the summer. On the 3rd of January, 1849, a young individual in good condition was shot in Belfast Bay, and on the 26th of the month another of similar age was shot at the North Bull, Dublin Bay.† On the 31st of July, 1850, either an Iceland or glaucous gull was seen by Mr. Darragh within the railway embankment at Ballymacarrett, a suburb of Belfast, on the south-east side of the bay; he was quite near the bird, and considered from the size of bill that it was *L. glaucus*. At Waterford this species is stated to have been obtained.

The glaucous gull appears, from the preceding instances of its occurrence, to visit the coast of Ireland as extensively as that of Great Britain. Though but few specimens have been procured—and but one adult—they were from all sides of the coast. This bird does not breed even in the Shetland Islands, but retires northward of them for that purpose.

The late Mr. G. Matthews, during his Norway tour, found a nest of the glaucous gull on an island a short way northward of the Ofiord river. It contained one young bird, in a bare hollow of the ground, and just the colour of the stones and moss around it.

* In Mr. Watters' collection. † Mr. R. J. Montgomery

THE SKUA.

Lestris catarrhactes, Linn. (sp.)
Stereorarius ,, ,, ,,
Larus ,, ,,

Is rarely obtained on the Irish coast.

The first specimen which came under my observation was in the collection of Mr. Massey, Pigeon-house Fort, Dublin, and was shot by that gentleman in the adjacent bay early in the month of July 1833, where he had previously killed one or two others. I have seen one from Portmarnock, Dublin coast, in the collection of Dr. Farran, by whom it was found in November 1836, lying dead on the shore in a state of emaciation, but in good plumage. Since that time, the species has been observed there, and in the Bay of Drogheda (August, &c., 1844).* A skua shot by James Martin, Esq., in the county Galway, early in the year 1835, and sent to the metropolis to be preserved, passed eventually into the Museum of Trinity College. A *Lestris*, particularly described to me in a letter from Mr. Poole, as seen very near to him in Wexford Harbour, at the end of July 1848, must have been of this species.

Fowlers who have frequently observed skuas of different kinds, describe one the size of a herring-gull, and in other respects agreeing with the bird now under consideration, as having been frequently seen by them in the autumn chasing gulls about Holywood bank, Belfast Bay: from the observant powers of my informants, I have no doubt that the bird they saw was the *Lestris catarrhactes*.

Subsequently to the preceding note being made—early in August 1848—two of these skuas were killed at a shot on Ballymacarrett bank. A fine specimen, obtained near Holywood on the 18th of September that year, came under my examination; and on the 22nd, three were seen in company near Thomson's Embankment,

* Mr. R. J. Montgomery.

Belfast Bay, in the vicinity of which place they were observed until the 3rd of October.

Mr. Robert Davis, jun., of Clonmel, in passing by sea from Dungarvan to Stradbally, on the 15th of August, 1838, observed a great dark-coloured skua, which he believed to be of this species, "give chase to a large gull and compel him to deliver what had been a copious meal of sprats. The birds flew within a few yards of the boat, and just as they passed the surrender took place. The skua immediately turned round, settled himself on the water, and picked up the sprats at his leisure, leaving the vanquished to fish for himself again." In the winter of 1845–6, one of these skuas (the species of which has been ascertained by a description sent to me) was shot near the island of Whiddy, Bantry Bay;—Lord Bantry has it preserved.*

Mr. G. Matthews, when on his sporting tour in Norway during the summer and autumn of 1843, met with the skua on an island at the entrance of Trondjiem (Drontheim) Fiord, on the 7th of July. It attacked both his companions and himself by striking them on the head, but they made the bird pay with its life for such temerity: it was supposed that they had approached its nest too nearly. They did not see the *L. catarrhactes* north of Trondjiem. In the summer and autumn of 1849, this was found by Capt. May to be the scarcest of the four species of skua along the coast of Norway, but he shot a few of them. They were easy of access;—when the party landed on the islands they occasionally flew very near them.

Dr. Fleming, in the 'Edinburgh Philosophical Journal,' vol. i. p. 99 (1819), gives a very interesting account of this bird at its breeding-haunts in the "Zetland Islands,"—the only place within the British seas where it nidifies—as Mr. Drosier likewise does in 'Loudon's Magazine of Natural History' for 1828 (vol. iii. p. 321): the chase of the eagle by skuas, as witnessed by the latter gentleman, is most graphically narrated.

The *Lestris catarrhactes* is the only one of the European species of its genus not included among the birds of the United

* Mr. G. Jackson.

States, or in the 'Fauna Boreali-Americana,' but its distribution southward is much greater than that of the others. It is very remarkable that it should be found at the extreme south of the continent of America—within 50° and 54° S. latitude, as is known to ornithologists. An adult male bird procured during the Antarctic Voyage at "Bird Island, East Falklands," was included in a valuable collection of birds presented by Capt. Crozier, R.N., of H.M.S. *Terror*, to the Belfast Museum.

THE POMARINE SKUA.

Lestris pomarinus, Temm.
Stercorarius „ „ (sp.)

Is of occasional occurrence in autumn and winter on various parts of the coast.

I CONTRIBUTED the following notice to the Zoological Society in 1835, when announcing this bird as an addition to our Fauna. "Of this skua, three individuals were procured in different parts of Ireland within a short period, about the commencement of the winter of 1834–5. The first, purchased alive at Youghal, county of Cork, on the 12th of October, was caught upon a hook at sea, and lived for a few weeks, part of which time it was in the gardens of the Zoological Society of Ireland. The second specimen was shot in Belfast Bay, on the 18th of October, and is in the collection of the museum of that town. "Its weight was sixteen ounces;—in its stomach were a rat, fish-bones, and feathers."* These birds were immature: the latter, which came under my own examination when recent, agreed precisely in plumage, &c., with Mr. Selby's description of the young (vol. ii. p. 519). The third, an adult bird, was shot from among a flock of gulls in the Phœnix Park, Dublin, on the 5th of November, and with the first-mentioned came into the possession of R. Ball, Esq., of that city (p. 79):—these two were subsequently added to the museum of Trinity College. Two young individuals, both of which I saw,

* Dr. J. D. Marshall.

were shot in 1837 ; one on the coast of Dublin, on the 6th of October, and the other on the 21st of December, in Dublin Bay.* In 1837, also (but no month named), one is stated to have been obtained at Portrush, near the Giant's Causeway, by the collectors for the Ordnance Survey. An immature bird, purchased in Dublin market, on the 10th of December, 1846 (after having been long kept), has come under my notice.† On the 16th of October, 1848, a stormy day, one was shot when flying inland from the sea, on the borders of Belfast Bay, whence it was driven, after being well beaten, by a black-backed gull. It was brought to me immediately after being shot, when the following description was drawn up :—

	in.	lin.
Length (total)	18	0
„ of wing from carpus	13	6
„ of bill from forehead to point, measured with compasses (not following curve)	1	4
„ of bill from rictus to point	2	2
„ of tarsus	2	$3\frac{1}{2}$
„ of middle toe, exclusive of nail	1	$7\frac{1}{2}$
„ of its nail, measured in a straight line with compasses from base to point		$4\frac{1}{2}$
Two longest tail-feathers exceed the others barely . .		3

This is a young bird of the year according to Jenyns's description, p. 282, to which I have only to add that the three toes, their connecting membrane, and the nails, are wholly dusky black on the *upper* surface, except a very minute portion at the base of the middle and inner toes, which is blue like the tarsi. The *under* side of the toes and membrane is likewise dusky black, except a very small portion towards the base, which is bluish flesh-colour; nail of hind toe flesh-coloured. Irides bluish black. It proved to be a male on dissection. Its stomach contained the vesicle of a *Fucus*, and other little fragments of vegetable matter.‡ This bird is much darker in colour than that described by Jenyns, and, in comparison with a stuffed specimen in the Belfast Museum, the difference is such as to require being remarked upon.

"The head, neck, and upper parts," in the stuffed specimen, are of a cinereous

* They were in the possession of Dr. Parkinson and Mr. Warren.

A pomarine skua—young bird of the year—found dead this winter on the beach at Ballantrae, Ayrshire (as noted in 'Charlesworth's Magazine of Natural History,' vol. iii. p. 585), came under my inspection.

† In Mr. Watters' collection.

‡ The stomach of one of Mr. Ball's specimens contained a large quantity of the bird's own feathers.

brown, while in the fresh one they are of a rich deep brown; and "the feathers on the back, scapulars, and wing-coverts" have an extremely narrow edge of reddish-yellow. The bird on the whole is considerably darker and richer in plumage than that described in the work referred to.

The measurements of three others of the immature (and of the adult bird, which was nineteen ounces in weight) are before me, but it is unnecessary to repeat any of them, they differ so little from the one noticed; two were eighteen, one eighteen and a half, and the other nineteen inches in total length, with corresponding differences in other measurements.

A young pomarine skua (agreeing with Mr. Selby's description), was shot in Tralee Bay on the 20th of November, 1850, and others of this or allied species seen there during the storm of that day and the next.*

One adult bird only has been obtained in Ireland, and it was the first in this plumage noticed within the British Islands. Mr. Yarrell remarked, in 1843, that "many more examples, most if not all of them young birds, have been obtained" (vol. iii. p. 486, 1st edit.). He did not particularize any adult as procured in Great Britain, but mentioned having seen two, without stating where they were killed.

The pomarine skua does not breed within the British Islands. A number of them were seen by Capt. May along the coast of Norway, in the summer and autumn of 1849.

RICHARDSON'S SKUA.

Lestris Richardsonii, Swainson, Yarrell.

Is occasionally procured on the coast.

The following notice of it, which I contributed to the 'Annals of Natural History' in 1840 (vol. v.), may perhaps be worth repeating here:—

Lestris Richardsonii, Swains. Richardson's Skua.—An adult *Lestris* shot at Malahide, county of Dublin, on the 27th September, 1837, and in the collection of

* Mr. R. D. Fitzgerald, jun.

Dr. Farran of Feltrim, exhibits characters much in unison with what are considered to be two species, the *Lestris Richardsonii*, and the *Stercorarius cepphus*, Leach, ('Fauna Bor.-Amer., vol. ii. p. 432), agreeing with the latter in dimensions, and with the former in colouring. At the same time it in size approaches the *L. Richardsonii* as described by Jenyns ('Man. Brit. Vert. Anim.,' p. 282) as nearly as his does the original description in the 'Fauna Bor.-Amer.' (p. 433). The following table contains the comparative measurements:—

	L. Richardsonii, Swainson.	*L. Richardsonii*, Jenyns.	*Sterc. cepphus*, Leach.	*Lestris*, Irish specimen.
	in. lin.	in. lin.	in. lin.	in. lin.
Length, total	22 8	21 0	19 0	19 9
„ excluding central tail feathers	19 6	18 0	16 0	16 9
„ of wing	13 6	13 0	13 0	12 6
„ of bill above	1 1	1 $2\frac{1}{2}$	1 2	1 3*
„ of bill to rictus	1 10	1 $9\frac{1}{2}$	2 0	1 10
„ of tarsus	1 10	1 9	1 8	1 9
„ of middle toe and nail	1 $9\frac{1}{2}$	1 $8\frac{1}{2}$		1 $7\frac{1}{2}$

Two longest tail-feathers very much acuminated, the others increasing gradually in length from sides to centre; those next in length to the two central ones exceeding the outer feathers by one inch; breadth of bill at base six lines.

Top of head, back, upper surface of wings and tail blackish-brown, varying in some places to blackish; entire under surface likewise dark-coloured, except the tail-feathers, which show a little white beneath; patch from the eye downwards pale straw-colour. This colouring is in accordance with that of the *L. Richardsonii* of the 'Fauna Bor.-Amer.' Mr. Jenyns remarks that the species is subject to considerable variation of colour in the adult state:—his description of its plumage accords tolerably well with that of *S. cepphus*.

I should have set down the Irish *Lestris* simply as a small individual of *L. Richardsonii*, had not its general accordance with *S. cepphus* at the same time suggested whether it might not as well be considered this bird, and consequently whether these terms apply to two really distinct species. An examination of specimens would at once decide the question.†

On the 14th of August, 1838, Mr. R. Davis, jun., of Clonmel, obtained a fine adult bird of this kind, which was found in a

* Following the curve; the others may have been measured in a straight line.

† Since the above was written, the 4th part of Temminck's 'Manuel' has been published, and here *S. cepphus* (J. Ross, and not Leach or Richardson, quoted for it) appears as a synonym of *L. parasiticus* (p. 502). The description of *S. cepphus* would indeed seem about equally applicable to a small *L. Richardsonii*, or a large *L. parasiticus* (1840).

In Degland's work, published in 1849, *L. cepphus* and *L. Richardsonii* are made identical.

perfectly fresh state floating in Dungarvan Bay, on the Waterford coast:—it was kindly sent to Dublin for my inspection. At the time it was met with, that gentleman observed some skuas in pursuit of gulls outside the Bay of Dungarvan, but the exact species could not be told. Mr. R. Chute informed me in February 1846, that he had "got a fine old Richardson's skua (light straw-coloured one described by Yarrell) shot in Tralee Bay in the winter of 1845; also a young bird (a black-toed gull) shot by a gentleman when grouse-shooting on the 20th of August last."

On the 19th of September, 1846, a young bird of the year, slightly wounded near Bangor, Belfast Bay, came into the possession of Dr. J. D. Marshall, with whom it became at once familiar. It was a very attractive pet-bird, perching on his arm, and looking up to his face, in the most engaging manner, with its fine beaming hazel eye. It took great pleasure in the application of the hand to its plumage. It was fed wholly on fish, which were freely partaken of, and on their being let drop from a little height, would be seized before they reached the ground. The cause of its death was unknown: it appeared in the highest health the day before. A bird of this species, shot in Belfast Bay on the 20th of September, 1850, is in what I should consider the plumage of the second year. Its legs and toes with webs are wholly black. The two longest tail-feathers exceed the next in length by an inch, and suddenly taper to a point, being nearly an inch broad where they pass the others, though quite pointed at the extremity. Mr. R. J. Montgomery informs me that a very observant man in the Coast Guard Service has seen Richardson's skua in the bays of Dundalk and Drogheda, as well as on the west coast, and that he described the birds in a manner not to be mistaken. He once obtained their nest on a small rocky islet off Achil, where he was stationed for several years. This statement connected with *L. Richardsonii* is good, as it is the only one of the four species at all likely to breed there;—it and *L. catarrhactes* are the only two known to nidify in the British Islands, and the latter, as already mentioned, is confined to the Shetlands. Richardson's skua breeds in a

number of the more northern Scottish islands. Mr. Montgomery mentions that this bird has been shot at Dunany Point, county Louth, by Lieut. Wray, R.N.; and that he saw an immature specimen in a fresh state about the year 1846 (in Mr. Glennon's, Suffolk Street, Dublin). It was said to have been shot inland at Powerscourt, county Wicklow. In a subsequent communication my correspondent states that he had seen—but never within shot—several of these birds, both adult and young, in the Bay of Drogheda, within the first three weeks of September 1850.

Sir Wm. Jardine considers that this "is certainly the most common of the British skuas,"* and that late in autumn it is not unfrequent in the Frith of Forth, where he has procured many specimens in various states of plumage, from having shot both the adult and young: Mr. Yarrell, too, considers it the most common. It would be difficult to say what *Lestris* is the most frequent on the Irish shores, as the skuas, though daily seen in the autumn on some parts of the coast, are not often shot; but it is singular that of the species considered the rarest in England and Scotland —*L. longicaudatus*—most specimens have come under my inspection; and of the next rarest—*L. pomarinus*—as indeed of the *L. catarrhactes* also, I have seen more individuals than of the *L. Richardsonii* noticed as the most common species in Great Britain.

The editor of the 'Edinburgh Philosophical Journal' adds (vol. i. p. 104, 1819) the following note to an interesting paper of Dr. Fleming's, "On the Arctic and Skua Gulls:"—"During our six days' confinement by a storm, on the dreary and remote rock of Foulah, we had frequent opportunities of observing the arctic skua. This bird we found fully as troublesome as the common skua, for the moment we approached near to its nest it beat us upon the head and in the face with its wings, and continued to pursue us until we quitted its domain."

Mr. James Wilson, in his 'Voyage round the Coast of Scotland and the Isles,' thus describes what was to him a new feature in this bird's habits:—"Saw around us for the first

* 'Brit. Birds,' vol. iv. p. 267.

time during the present voyage, specimens of the arctic gull (*Lestris Richardsonii*) pursuing, as is their wont, the other kinds of gull—forcing them to disgorge their food. Observed a feature of this manœuvre which we had never before noticed. When they descend upon what may be called the victim gull, either actually striking it on the back, or with an angry menace seeming to do so, they frequently tumble themselves head over heels beyond and beneath it, so as to hang, as it were, for a few seconds in the air, back downwards, but with ready beak, intent to seize the savoury half-digested morsel, disgorged in terror by their timorous cousins." Mr. Hewitson, in his work on the 'Eggs of British Birds,' gives an interesting account of this species in its breeding-haunts in the Orkney and Shetland Islands and on the coast of Norway.

At a meeting of the Dublin Nat. Hist. Soc. in January 1842, the Rev. H. H. Dombrain made the following communication:—"I may mention a circumstance that occurred to my father [Sir James Dombrain] while grouse-shooting in the Isle of Rum, Scotland, in 1837. The dogs had come to a set at a pack of grouse, and while the sportsmen were walking up to them, they observed two birds hovering over their heads, which my father, from having observed eagles, &c., do the same in Donegal, took to be hawks. The grouse rose and a brace were shot; the birds made a stoop at the wounded grouse when falling, but failed. The dogs having left the game, my father was anxious to try whether he could shoot the 'hawks' also, and, having loaded, directed the man to throw up one of the dead grouse into the air. The birds made a stoop at it, and he shot them both, when, to his surprise, they seemed to be sea-gulls;—he brought them home to me, and they proved to be a male and female skua (*Lestris Richardsonii*);"—I have seen both these birds in Mr. Dombrain's possession. The measurements of the male (adult) are—

	in.	lin.
Length (total)	21	0
,, exclusive of long tail-feathers	17	6
,, of bill above in a straight line	1	2
,, of bill from rictus ,, ...	1	11

	in.	lin.
Length of tarsus	1	7½
,, of middle toe and nail in a straight line . .	1	7
,, of wing from carpus	12	4
Bill, broad at base	0	6

This species was killed by Captain May in the summer and autumn of 1849 along the coast of Norway.

THE LONG-TAILED SKUA.

Buffon's Skua (Yarrell).

Lestris longicaudatus, Brisson (sp.) 1760.
Stercorarius ,, ,,
Lestris Buffonii, Boie, Yarrell.
Lestris parasiticus, Temm. (2nd edit.), Gould, Jenyns.

Is of occasional occurrence in autumn on some parts of the coast.

In a communication made to the Zoological Society of London in 1834, it was remarked by me that "specimens of the true *Lestris parasiticus*, Temm., have repeatedly occurred in the bays of Belfast and Dublin."* I was induced to mention this circumstance from so very little being known of the bird as a British species. Mr. Gould in 1832 exhibited a specimen from Orkney at a meeting of that society, as the first one that had been met with.† My note has been transferred by Mr. Yarrell to *L. Richardsonii*‡—"the true *Lest. parasiticus*, Temm.," which I termed it, was intended to particularize the species now under consideration, as that was the name used by Mr. Gould when calling the attention of the society to it as distinct from *L. Richardsonii*, and also, the name applied to it in the 'Fauna Boreali-Americana,' where the two species were first distinguished.

* Proceedings Zool. Soc. 1834, p. 31.

† Ibid. 1832, p. 189.

‡ Brit. Birds,' vol. iii. p. 492.

All Mr. Yarrell says of the *L. parasiticus* as British, is, that—"An adult specimen, killed in this country, is preserved in the British Museum; and the Zoological Society, in 1832, received the species from Orkney. * * * Young birds have been killed in the vicinity of the Tyne and on the coast of Durham, in the month of September; and Mr. John Hancock, of Newcastle-upon-Tyne, obtained a mature individual that was shot near Whitburn, in Durham, at the end of October 1837" (p. 495).

To myself, this is the best-known species of *Lestris*, and it was the first to come under my observation both in Belfast and Dublin. A beautiful adult male—now preserved in the Belfast Museum—was shot near Holywood, Belfast Bay, on the 12th of September, 1822, in the presence of my friend, William Sinclaire, Esq.; and on the 21st of October that year an immature bird fell to my own gun on the shore there—at Holywood rabbit-warren. I was but a juvenile shooter, and it was my first victim killed on the wing, but certainly not after the most approved fashion. Having observed it coming towards me, my gun was pointed upwards, and I waited until the poor skua, flying very leisurely, came innocently almost right above my head, when, as it was about to cross my barrel, the trigger was pulled, and it came down "stone-dead." The late Mr. John Montgomery, a keen observer of birds, and who formed a collection of native species, noted the adult specimen alluded to as the "arctic gull, *Lestris parasiticus*." Under that name, it appears by a note in his MS., that in August 1824 two of these birds were sent to him from Dundrum (Down); to which it is added, that they were both in the plumage of the black-toed gull of Bewick.* One of them lived for a month, by being fed on bread and milk: one certainly (now in the Belfast Museum), and probably the other also, was the true *L. parasiticus*. Dr. J. D. Marshall procured, on the 13th of September, 1831, an adult male bird of this species which was wounded off Holywood, Belfast Bay, in which locality

* Bewick's "Black-toed Gull" is *L. Richardsonii*, but its plumage (and that only is mentioned in the MS.; no dimensions being given) will serve for immature *L. parasiticus* almost as well.

also, but some miles nearer to the entrance of the harbour, Mr. Hyndman, when dredging in the autumn of 1841, saw an adult male on wing; its extremely long tail-feathers satisfying him of its species. In the 'Dublin Penny Journal' of March 9th, 1833 (p. 292), a bird of an unknown kind was described and figured. Being in Dublin that month I went to see the specimen, which was in the collection of Mr. Massey of the Pigeon-house Fort, and found it to be an immature long-tailed skua. It was shot on the 9th of October, 1832, from the Pigeon-house wall, which runs far into the Bay of Dublin.

Mr. J. V. Stewart informed me in June 1845, that while sea-shooting at Ards in the north-west of Donegal in November 1816 or 1817, four of these skuas, in company, flew over his head, and he killed one of them;—he had not seen the species since. He considered skuas generally as very rare there, and though yachting much at one period, had observed only two or three more of the genus:—they were all larger than the bird now under consideration.

On the 20th of October, 1845, two of these long-tailed skuas were seen flying in a south-west direction above Belfast Bay. One was shot on the 1st of March, 1846, in a ploughed field near Tramore (county Waterford), in which it was picking up objects from the ground. It came in rapid flight direct from the sea to the field. This bird is in the collection of Mr. Warren, Dublin. Its

	in.	lin.
Length (total), to end of two longest tail-feathers	17	0
„ exclusive of two longest tail-feathers	15	6
„ of wing	12	3
„ of bill above, without measuring curve	1	0
„ of bill to rictus, measured in a straight line	1	7½
„ of tarsus	1	7
„ of middle toe and nail in a straight line	1	4
Transverse diameter of bill at front	0	4½
Of the two longest tail-feathers; the one passes others	1	0
„ „ the second passes others	1	6
Breadth of the two longest tail-feathers where they pass the others	0	1½

This bird would have been adult at the following moult.

On the 17th of October, 1848 (weather stormy), a fine adult male bird was shot when flying over the point of the Kinnegar, Belfast Bay, by Capt. Bradshaw, R.N. I made the following notes on it previous to its being skinned :—

	in.	lin.
Length (entire)*	15	9
,, of wing from carpus to end quills	12	0
,, of bill from forehead to point measured in a straight line	1	1
,, of bill from rictus to point	1	9
,, of tarsus	1	$9\frac{1}{2}$
,, of middle toe	1	3
,, of middle toe-nail	0	4
Transverse diameter of bill on a line with commencement of feathers at upper mandible	0	5

The entire plumage is precisely that of the adult *L. parasiticus* described by Gould, viz., "Top of the head and space between the bill and eyes of a deep blackish-brown, terminating at the occiput; the whole of the upper surface of a clear brownish-grey; quills and tail-feathers much darker; the throat, neck, and under surface of a pure white, with the exception of the cheeks and sides of the neck, which are tinged with a delicate straw-yellow; legs and feet black" (quoted from Jenyns's Manual). To this it may be added, that the straw-yellow occupies nearly two inches from the base of the bill on each side of the head; it likewise occupies about an inch of the back of the neck between the black of the occiput and the commencement of the grey of the back, thence to the breast for three inches, white appears —at the commencement of the belly or lower plumage it is very pale grey, but becomes gradually darker thence to end of tail. The tarsi differ in colour from Gould's description in being dull leaden grey instead of black; the entire toes and webs on both sides are uniform black; legs above tarsal joint blackish.† Eye very dark bluish-black; bill blackish; cere, bluish-black.

Comparing this bird with the *L. parasiticus* already noticed in the Belfast Museum —which has the two longest tail-feathers exceeding the others by six inches— I find, in all the characters of *form*, colour of bill, tarsi, and toes, precise similarity. But a difference consists in the recent bird having the beautiful straw-coloured feathers on sides of neck and the white breast of maturity. The stuffed one has merely the throat white, the entire breast being greyish-ash. Straw-yellow appears faintly indicated on the sides and back of the neck over dull grey feathers; next moult would have brought mature plumage with it. In all other respects the plumage of

* This bird has lost the two long tail-feathers; the two longest that remain exceed the others by half an inch; so that the length, exclusive of the two longest tail-feathers, is $15\frac{1}{4}$ inches.

† The light-coloured portion of the legs and feet in the adult male specimen, nearly thirty years preserved in the Belfast Museum, is pale greyish-yellow.

the two is similar, except in mere shade; the grey of the adult being lighter and handsomer and the blackish plumage of a darker tint. It proved on dissection a male, as its plumage denoted; the stomach was empty.

The late Mr. G. Matthews, distinguishing this bird as the "smaller long-tailed skua" (and satisfying me of his correctness as to the species), remarked that he saw many in 1843 at different parts of the coast of Norway, but not farther north than the Vaagsfiord. There were numbers at the entrance of the Saltenfiord in August, but not so many during winter.

In 1849 this species was met with by Captain May along the coast of that country from the commencement of the Arctic Circle to the north of Alten—towards and about the 70th degree of latitude it was quite common, and seemed more so than any other of the genus *Lestris*; it was the most accessible of them all. Several were killed: one on the top of a mountain about 2,000 feet above the sea, when the party were in pursuit of rein-deer; it was believed to be a hawk at first sight, and was a fine adult male. About the Salten Maelstrom, where there were a great many fish and consequently great numbers of gulls, skuas were particularly frequent; it depended on the presence of gulls whether or not any skuas would be seen.

During his sporting tour of 1850, Capt. May remarked that "the long-tailed skua seems to travel very far inland, as we shot one on the mountain in Lapland fully a hundred miles from the sea."

Although skuas frequent the coast pretty commonly, a few general notes on their occurrence may be added. They are, with the exception of the *L. catarrhactes*, whose dimensions mark its species, the most difficult of all our birds to be determined on wing, unless when adult, in which state unfortunately they are very rarely met with. This is owing to the three other species passing through much the same stages of plumage from youth to maturity, which, being attained, the comparative length of the two central tail-feathers is an admirable mark of distinction. On a close examination, the superior size of *L. pomarinus* to that of the other two always marks it at any age, but we must sometimes

pause before we can distinguish the immature *L. Richardsonii* from *L. longicaudatus*, so much do individuals of each species differ in size.

Skuas have become very scarce in parts of Belfast Bay, where in my boyhood they almost daily came under my notice in autumn, and not unfrequently two or three in a day—in winter, I had not the opportunity of observing them. I allude to the Kinnegar or Holywood rabbit-warren, where in the fine breezy days of September and October they thus appeared, and at the same time terns, which are now about equally rare. Without the presence of terns or gulls, which the skuas make their caterers, they are not to be seen, unless accidentally. Although we cannot admire their predatory character, they are very interesting birds, from the great power and rapidity of flight which they display. As they come sweeping down upon the large gulls, it is extraordinary to observe these drop their prey, which apparently within the next second of time is appropriated by the robber skuas. These birds present a singular subject for contemplation in being *born robbers*, endowed by nature with every faculty that will enable them to bear off and live upon booty seized from or dropped through fear by their most nearly allied species—the gulls and terns.*

I was told at Horn Head in 1832 of some species appearing on the coast regularly in autumn and remaining during that season and winter. On the 1st of August, 1850, a gentleman visiting that locality saw several of these birds in pursuit of herring-gulls as they flew out to sea. An observant shooter has seen a skua (probably from his description *L. pomarinus* or *L. Richardsonii*) in Belfast Bay in the autumn of 1842. Two were noticed there on the 31st of August, 1843, and one on the 12th of September, 1844 ;—a herring-gull was chasing it at the time. At the entrance of Dundrum Bay, county Down, on the 23rd of August, 1836,

* I give the following as an unusual occurrence, from the journal of the late John Templeton, Esq. :—"*Aug.* 3, 1812. Mr. M'Skimmin, of Carrickfergus, mentioned to me that a black-toed gull (*Larus crepidatus*) had been caught on a baited hook near that place. The fishermen remarked to him that they seldom appear in the bay, and that when seen, they are very shy, and keep at a distance from their boats and lines."

I saw three skuas in company, all of which were of a uniform blackish-brown colour. Mr. Hyndman, who went farther out to sea than I did myself, saw one apparently larger than those just mentioned, and with white on the under plumage; our boatman said that "two sizes" of them were known to him, the larger being white beneath. A gentleman residing at Dundrum, who shoots much about the bay, stated that "three sizes of dirt-birds," as he called them, frequent it, and that the largest is the whitest on the under parts: none of them is near the size of the *L. catarrhactes*. If my informant be correct respecting the "three sizes," and the largest being less than that species, they must be *L. pomarinus*, *L. Richardsonii*, and *L. longicaudatus*; the white-bellied one of the greatest size will be the adult male of *L. pomarinus*, but this description of colour is no guide to species, as all the three pass through much the same changes of plumage, and the under parts are more or less white in the adult males of all. Mr. Montgomery noted his having seen three arctic gulls in the outer bay of Dundrum in August 1823.

In crossing from the mainland to the island of Lambay, off the Dublin coast, on the 5th of June, 1838, we saw two skuas, which were so dark in colour as to appear entirely black; they produced great consternation among a group of terns (*Sterna hirundo* and *S. arctica*) by giving chase to them: their flight was amazingly rapid; they literally "bore down" upon their weaker brethren. Skuas have been observed by Mr. S. Poole about the Saltee Islands, Wexford coast, in summer, and another gentleman states that they may be seen "all the year" off the eastern bar of Wexford Harbour. Specimens have been obtained on the coast of Waterford;* Mr. R. Ball has observed young birds so early as the beginning of July about Youghal, and one species is considered common on the Galway coast.† Skuas, or "black gulls," as they were called, about the size of the common gull, but "rather heavier in the wings, and having pointed tails," have been observed in Tralee Bay in 1846, and again in January 1850.

* Dr. Burkitt.

† Mr. W. M'Calla.

THE FULMAR.

Procellaria glacialis, Linn.

Is extremely rare.

It was first recorded by me as Irish in the following communication, published in 1846, in the 18th volume of the 'Annals of Natural History' (p. 312).

"Among ornithological notes made by the Rev. Joseph Stopford—a gentleman well acquainted with our native birds—and communicated to Dr. Harvey of Cork (by whom I have been favoured with them)—is one of a fulmar having been shot at Inchidoney Island, on the southern coast, in 1832, by Captain Hungerford. It was sent to the writer, by whom it was presented to Sir Charles Paget, then forming a collection of birds at Cove. In January 1846, Mr. T. W. Warren of Dublin kindly communicated to me a detailed description of a bird shot on the North Strand, Dublin Bay, on the 1st of that month, mentioning at the same time that it was a species which had never before come under his notice, nor that of Mr. Glennon, taxidermist, through whose hands so many rare birds have passed within the last thirty years. The description marked it as a fulmar in adult plumage:"—I have since seen the specimen in Mr. Warren's collection.

A third instance of the fulmar's occurrence has been made known to me:—one having been shot by the Rev. J. Stopford at Castle Freke, county Cork, in the month of October 1845.

The fulmar is very little known as a British bird, excepting at St. Kilda and the neighbouring islets of Borrera and Soa, where it breeds annually in multitudes, and is their most valuable product; the eggs and birds themselves being used as food, and the oil for various purposes. Sir William Jardine is not aware of this bird's occurrence on the shores of the mainland of Scotland ('Brit. Birds,' 1843); but a few individuals have been obtained at different parts of the coast of England and Wales (Yarrell). It inhabits the arctic regions of both hemispheres.

THE GREATER SHEARWATER.

Puffinus major, Faber.

Is occasionally seen upon the coast.

Our information on this species as Irish is chiefly due to Mr. Robert Davis, of Clonmel, who kindly furnished me with the particulars of two examples which he procured in different years, notices of which were published in the Proceedings of the Zoological Society of London in 1837, p. 54, and 'Annals of Natural History' in 1842 (vol. ix. p. 433). When the first Irish bird was announced, one individual only had been positively recorded as British, but since that period Mr. Yarrell has brought together a good deal of information on the species, the best of which was supplied by Mr. D. W. Mitchell. This gentleman mentions the occurrence of *P. major* as not unfrequent on the Cornish coast, and that it is well known to the inhabitants of the Scilly Islands. The observations of my correspondent at Clonmel may still be given in full, more especially as he only, so far as known to me, has attended to the habits of the bird in captivity. Mr. Davis remarked of the first specimen :—"This was taken in August 1835 near Dungarvan, county of Waterford, and sent to me alive. It was apparently in good health, but would not eat anything, and died after having been in my possession for about ten days or a fortnight. It had an extremely rank, fishy, or oily smell at all times, but I never saw any appearance of oil being discharged from its mouth or nostrils. It seemed unable to walk, but scrambled along with its breast about an inch from the ground. Although its wings were perfect and uninjured, it made no attempt to fly, but if let fall from a height dropped heavily to the ground. It showed an inclination to climb, having several times mounted up the handle of a long spade that rested against the wall of the yard in which it was kept. It did not ramble about, nor care much for water, but when put in a large tub, very dex-

terously pulled itself up by the hooked bill, until the claws got on the edge. When handled it bit severely."

The second specimen was received alive on the 19th of September, 1839, by Mr. Davis, who informed me that—"it was captured one or two miles outside Dungarvan by a person fishing for hake [*Merlucius vulgaris*] with a hook and line, it having taken his bait. I kept it alive for about a week, but not having a suitable place for it, had the bird killed and set up. It was more lively than the former one—which, so far as can be recollected, it resembled in every respect as to plumage—and ran along with the breast about an inch and a half from the ground. Having on one occasion placed this bird on a roof, it seemed to be more at ease on the inclined plane afforded by that situation than on a flat surface; and mounted rapidly to the top, though on reaching the edge, no attempt at flight was made, and it fell heavily to the ground. It rarely stirred at all during the day, but kept itself as much out of view as possible, and if the body could not be concealed would endeavour to hide its head." On visiting Dungarvan in the summer of 1840 Mr. Davis learned that—"this species is never met with near the shore, but only far out, and is occasionally taken on the hook and line employed in hake-fishing. The fishermen sometimes keep them for weeks about their houses, and in some instances the birds have become tame: they never attempt to fly. A man had one a few days before I went there, but killed it with dogs on a piece of water. I could not hear of this species having ever been shot, or otherwise taken than on a hook. It is commonly known by the name of *hagdown*."* The Manx shearwater seems to be unknown there. Both Mr. Davis's birds have, through his kind attention, come under my examination. This gentleman remarks on the figures of *P. major* in Mr. Yarrell's 'British Birds,' that judging from his two living ones the attitude is incorrect, and if the bird could assume it at all (which he doubts) it would be impossible for it to remain in the position for a second of time.

Mr. R. Ball, when dredging off Bundoran, on the west coast

* It is called *hackbolt* at the Scilly Islands (Mr. Mitchell).

of Ireland, on the 16th of July, 1840, observed three shearwaters on wing near to him, which he believed to be of this species. He considered them to be of larger size than the Manx shearwater, whose appearance on wing was familiar to him, from his having often seen it when crossing the sea from Dublin to English ports. In plumage, too, they were remarked to be somewhat different from that bird.

On the 24th of August, 1849, Mr. R. Warren, jun., when hake-fishing, on the Maid, about three miles off Cork harbour, saw two of the great shearwaters, which he remarked were easily distinguished from the *P. anglorum* (of which numbers were seen the same day) by their larger size and darker colour.

This species is known only as visiting the coast, and not as breeding in any of the British Islands. In Scotland it has not been observed (Jard. Macg.) and very few individuals have been ascertained to visit the coast of England, with the exception of Cornwall, where Mr. Mitchell believes that it "appears pretty regularly every autumn." He was informed of its being a constant visitant in the latter part of autumn to the Scilly Islands. The geographical distribution of this shearwater seems yet to be very imperfectly known. Even in Iceland, according to Faber (as quoted by Yarrell), it is not known to breed, and is very scarce.

THE MANX SHEARWATER.

Puffinus anglorum, Ray.

Is a regular summer migrant to some parts of the coast.

Judging from its being enumerated in the scanty catalogues published within about the latter half of the last century, the species was then more common on our coasts than it has been of late years, though no Irish breeding-station seems to have been known. Harris, in his 'History of Down' (1744), observes, that "it frequents the Ardes, and perhaps other coasts of the county." Smith, in his 'History of the county of Waterford' (1745), says, "These we have on the coast, but whether they breed here or

not is uncertain;"—the same author, in his 'History of the county of Cork' (1749), remarks, "it is not certain whether they breed with us, although they are frequent on our coasts." Rutty, in his 'Natural History of the county of Dublin' (1772), merely states that "it has been frequently seen on these coasts."

What I know of this petrel of late years, beginning with the north, is, that specimens shot in April and May 1839, at Portrush, near the Giant's Causeway, are in the Ordnance Museum, and that in the month of October, that year, an individual was found dead, inland, near Belfast. In October 1849, a communication from the Rev. G. M. Black, of Annalong, at the sea-base of the mountains of Mourne, informed me, that "Manx petrels appear on this coast from the middle of July till October, and are very much on the wing. Their flight is easy and graceful, rising ten or twenty yards above the water, and then again skimming its surface. It is very different from the straight and laboured flight of the guillemot, razorbill, or puffin. I have never remarked more than eight or ten of them together, and seldom so many, but altogether they are in considerable numbers. They are vulgarly called "mackerel cocks" (a name applied to others of the puffin tribe),* as arriving on the coast shortly before the annual shoal of that fish, and are looked on by fishermen as its precursors. Their appearance is consequently welcomed by them." Further questioning my correspondent on this subject, he replied that there is no doubt whatever as to the species, as he had frequent opportunities of observing the birds on wing within fifteen or twenty yards, when mackerel-fishing in a small pleasure-boat during summer; he very seldom saw them swimming. As they never come ashore, they could be observed only at sea. Their plumage and mode of flight, he adds, are quite distinct from those of any of the *Alcidæ*, their wings are much longer, and their "beat" slower. The first bird seen by Mr. Black in the season of 1850 was on the 8th of July, but men who had been mackerel-fishing in the channel—far out at sea—stated that they had observed

* Mr. Austin states that the *Sterna hirundo* is called *mackerel gull* on the coast of Waterford and Wexford ('Ann. Nat. Hist.' vol. ix. p. 435).

them some time previously. They were particularly scarce this year during the whole period of their visit, although mackerel have been unusually abundant; on the 21st of September, it was remarked by my correspondent that none had been seen lately.

Four Manx petrels, killed on the Dublin coast, have come under my notice;—one obtained by Mr. Massey of the Pigeon-house Fort, in the bay, in July 1833; a second in April 1835; a third in the summer of 1836 (preserved in the University Museum); and a fourth obtained at the island of Lambay, in June 1848. This was one of a couple taken out of a hole in the cliffs there by Mr. R. J. Montgomery. No eggs were found on the day of his visit, but the species was believed to be breeding there. The inhabitants of the island questioned by him said they had never seen the birds before. In 1849, they were again there. My correspondent, writing on the 5th of June, stated, after having visited the island, that four had been taken out of the holes and killed by boys. Mr. Watters, when at Lambay in the last week of June 1850, was told that these petrels visit this island some years only, and breed there;—their eggs were correctly described by his informant, according to whom there were about a dozen birds last year; and fifty, twelve years before.

One of these shearwaters was seen by Mr. R. Ball near the Tusker lighthouse, on the Wexford coast, as we were proceeding by steam-vessel from Dublin to Cork, on the 15th of August, 1843. Early in May 1845, a considerable number of them were observed in Wexford Harbour, during one day; but on the following they were gone;*—doubtless on their northern migration. On the same day that the two great petrels were observed off Cork Harbour (see p. 409), a number of the common species was seen "so early as twelve at noon." Two flocks, each containing from twenty to twenty-five birds, appeared. One individual, which was wounded, dived several times on being pursued, and disgorged two sprats and the entrails of a fish.† In the 'Fauna of the county of Cork,' Dr. Harvey remarks, that "On an evening in the autumn of 1838, I watched for a long time a number of

* Mr. Poole. † Mr. Robert Warren, jun.

birds on the wing in Bantry Bay, which I have no doubt were of this species. We had no gun on board, or we should have had no difficulty in procuring several" (p. 16). This gentleman subsequently mentioned to me that one was obtained in Cork harbour in April 1846, and another in the same month of 1848.

Mr. R. Chute informed me in 1846 that this shearwater breeds on the larger Skellig Island off the coast of Kerry, whence a specimen was sent to him in July 1850. They are called *night-birds*, from the circumstance of their being only seen at night about the rock. He remarks that when spending two months at Dingle, in the summer of 1843, he was often out boating on very fine days, and always met with these birds either on wing or basking in the sun upon the water. He thinks they may breed on one or two other islands off the coast of this county, but only on that named are they positively known to do so. They have been stated to nidify on the coast of Mayo (but the precise locality was not mentioned). The young birds were sought for as food by the country-people.*

In Willughby's 'Birds' (1678), it is recorded of this species, which is called "the puffin of the Isle of Man; *Puffinus anglorum*"—"At the south end of the Isle of Man lies a little islet, divided from *Man* by a narrow channel, called the Calf of Man, on which are no habitations, but only a cottage or two lately built. This islet is full of conies, which the puffins, coming yearly, dislodge and build in their burroughs. * * * When they [young] are come to their full growth, they who are entrusted by the lord of the island—the Earl of Darby—draw them out of the coney-holes. * * * They usually sell them for about ninepence the dozen, a very cheap rate. * * * We are told that they breed not only on the Calf of Man, but also on the Silly Islands. Notwithstanding they are sold so cheap, yet some years there is thirty pounds made of the young puffins taken in the Calf of Man: whence may be gathered what number of birds breed there" (p. 333). This, written more than 160 years ago, suggests the cause of the poor birds deserting the islet.

* Mr. R. J. Montgomery;—the late Mr. R. Glennon, jun., was his informant.

Sir William Jardine observes—the Calf of Man "becoming more frequented, and a light-house being erected, the birds disappeared entirely, and on a visit which we made to this interesting island, we were much disappointed in scarcely being able to trace even the recollection of their former abundance."* Although the species which derives its name from the island has deserted it, there is still great abundance of other sea-fowl there in the breeding season, as I had an opportunity of witnessing on the 21st of May, 1826, when proceeding from Belfast to Liverpool in the *Chieftain* steam-ship. It was so beautifully calm and serene, that we sailed between the Isle of Man and the Calf, keeping but a few yards from the latter, which contains two handsome lighthouses, both built on the same plan, with an excellent dwelling-house in modern taste attached to each. Between the Calf and a rock at some distance from the shore, the run of the tides was very strong, but the sea, nevertheless, did not lose its smoothness, and it was most interesting to observe fishes leaping in every direction, and sea-fowl of various species (chiefly common guillemots and razorbills), diving and sporting around. The Calf of Man is girt by cliffs, in some places lofty and perpendicular, but the most picturesque rocks are those that stand apart, one of which has an arch opening entirely through it.

At the Scilly Islands the Manx shearwater continues to breed; a full and excellent account of it, as observed at the barren island of Annet, one of the group, was contributed by Mr. D. W. Mitchell to Yarrell's 'British Birds.' The species is said also to breed on some of the Hebrides, Orkney, and Shetland Isles. This shearwater is but an accidental visitant to the North American coast (Bonaparte).

Authors have often described flocks of birds which keep flying all day over the Dardanelles and Bosphorus, and are never seen to alight either for rest or food; but only of late was their species positively determined. As remarked in Walsh's

* 'Brit. Birds,' vol. iv. p. 255.

'Constantinople,'—"one reason why they have escaped the close attention of naturalists is, that no person is permitted to kill any bird upon the Bosphorus without incurring the displeasure of the Turks;" and, as further stated by the Bishop of Norwich, "an additional reason for the respect in which they are held by the Turks is, that, in consequence probably of their restless life, they are supposed to be bodies animated by condemned souls, thus doomed for ever to frequent the scenes of their former existence;" —they are in fact called "damned souls." These shearwaters are fully treated of in the 'Familiar History of Birds' by this author, who, possessing a specimen, believed it to be the *Procellaria cinerea*, but on a later examination, since the genus became better known, it was said to be *P. obscurus*.* My friend Mr. H. E. Strickland, having noticed the bird of the Bosphorus as the *P. anglorum* (Zoological Proceedings, 1836, p. 101), I wrote to know if he still considered it that species. He replied, Sept. 13th, 1850, "I have just re-examined the bird I shot on the Bosphorus in March 1836, and it is decidedly *P. anglorum*; the beak measures $1\frac{3}{8}$ inches to the frontal feathers; the wing 9 inches." It is added, "As both this and *P. obscurus* are known to inhabit the Mediterranean, I have no doubt that *both* frequently migrate up and down the Bosphorus, and as their mode of flight and general appearance are similar, they have indiscriminately obtained the name of *oiseaux damnés*."

On several days in the middle of May 1841, I had the gratification of seeing in both the localities named, "strings" of these birds—for they all flew in single file—rapidly winging their way just above the surface of the water. Once or twice only did I see one touch that element, and then but for a moment, though flocks were in sight all day from an early hour of the morning. The singular feature, as it seems to me, connected with these birds, is, their flying in the manner described during the entire day, in bright as well as cloudy weather; and not their being never seen to feed, for like the rest of their tribe, they are doubt-

* Proceedings of the Zoological Society, 1843, p. 70.

less night-feeding birds. Temminck does not give any indication of his being aware of these birds appearing here in the manner described.

THE FORK-TAILED PETREL.

Thalassidroma Leachii, Temm.* (sp.)
Procellaria ,, ,,

Is of occasional occurrence in all quarters of the island.

Those obtained in the north shall first be noticed. In the winter of 1831 a specimen was found dead—but in excellent condition and plumage—near Lisburn. During a storm in the winter of 1833–4, one was sprung from a bog near Downpatrick, and shot; the fowler imagining from the forked tail that it was some kind of swallow. In August 1843, the gamekeeper at Tollymore Park informed me that about ten years before that time, he found one of these birds lying dead in "a hollow" among the mountains of Mourne. One shot on the 16th of December, 1834, at Conswater Point, Belfast Bay, about a mile from the town, came into my possession, and on the 10th of April, 1838, I obtained a recent bird, which was found dead near Waringstown, county of Down. There is considerable difference in the size of these two specimens, as well as slight differences in plumage: the former is $8\frac{1}{4}$ inches in length; the latter $7\frac{1}{4}$, the size of the individual described in Yarrell's work. Mr. H. H. Dombrain, one day in September 1836, when in a revenue cruiser off Arranmore, coast of Donegal, saw altogether about a dozen of these birds, two of which occasionally appeared at a time.

On the 16th of December, 1831, two fork-tailed petrels were

* Dr. Fleming, when giving the name of *Bullockii* to this species, in his 'History of British Animals,' p. 136, states, that Dr. Leach having intimated to him that Temminck proposed to name the species *Leachii*, he "remonstrated, but in vain, against his acceptance of a compliment to which he had no claim;" Mr. Selby, in the same spirit, adopted the name bestowed on the species by Fleming. If the bird were to be "called after" any individual, Bullock being its discoverer certainly had the best right to be so honoured, but, according to the stern law of priority, the term *Leachii* must be adopted.

received in a fresh state, from the county of Tipperary, by Dr. R. Graves, in whose collection I subsequently saw them : one had been found dead on a mountain. About a fortnight afterwards a specimen was picked up, dead, at Malahide, on the Dublin coast ;—and preserved for the Royal Dublin Society.* On the 11th of December, 1834, Mr. R. Ball wrote to me from Dublin, that he had lately seen in Mr. Glennon's possession some specimens which had been procured inland. In 1818, the year in which the species was discovered by Mr. Bullock at St. Kilda, Mr. R. Ball obtained one of these birds in the county of Cork : it was found in the month of September on a mountain, about eight or ten miles from the sea. One was shot at Clontarf, Dublin Bay, on the 2nd of December, 1835, and in December 1839 another was found dead near Bray. One of these petrels was picked up dead, on the lawn at New Chapel Glebe, about four miles from Clonmel, on the 4th of December, 1835, after a succession of severe storms.† About Waterford fork-tailed petrels have been procured.‡ In December 1845, Mr. R. Chute obtained one on the south-west of the island, and on the 20th of November, 1849, he kindly sent me one of two specimens he had just then received, remarking that for the preceding ten days many had been seen about Tralee. This gentleman is not aware of any breeding-haunt of the fork-tailed petrel on the coast of Kerry, though, as he remarks, "the storm petrel breeds on many of the islands of our coast." In reference to the last date, I was afterwards informed that one day in November 1849 fork-tailed petrels were flying "as numerous as swallows," above Tralee Bay. Some of them were shot, but they fell too far out in the water to be recovered, except in one instance. The reply to my inquiry respecting the probable number seen, was, that "they kept apart from each other, passed and repassed continually ; but not more than eight or ten would be seen at once. Near every part of the shore

* These three are perhaps the individuals noticed by the Rev. T. Knox in Loudon's 'Magazine of Natural History,' vol. v. p. 576 ; although the localities mentioned do not accord.

† Mr. R. Davis, jun. ‡ Dr. R. Burkitt.

that was visible, they appeared as numerous as from the canal piers, whence they were particularly observed." In June 1850, my correspondent saw one off Kerry Head. On the 22nd of August, the same year, two were noticed on wing above the canal at Tralee, and one of them was obtained.*

In a communication to the 'Dublin Penny Journal' for 1833–34 (vol. ii. p. 283), a petrel, with a tail forked like a swallow's, is described as breeding on rocky islets near Sline Head, Galway. The account is full and circumstantial, and nothing in it opposed to what we might believe of this bird, except the description of the egg, viz.,—"about the size of a starling's, and speckled like the sparrow's:" a statement which is fatal to our belief in the story, the egg of this petrel being pure white.

It will be remarked, that of the few specimens noticed, four were obtained about the same time, in the winter of 1831, in the counties of Antrim, Dublin, and Tipperary: there had been a severe storm before their capture; and at the time of their occurrence here, many were procured in various parts of England. In December 1834, again, we see that they were met with in different quarters; as they were in December 1835, about Dublin and Clonmel, after storms. Although some authors are not satisfied on this point, there seems to me not the least doubt that these petrels are driven inland by severe gales.

One of these birds, which I have seen in the collection of the Rev. G. Robinson of Tartaraghan, county Armagh, was killed by striking against a lamp-post in the town of Plymouth.

Little is known of the fork-tailed petrel further than its being met with in the European and American seas, and occasionally obtained inland. Sir William Jardine, writing in 1843, remarked, in reference to St. Kilda,—"We believe no other breeding-station is now upon record."†

Wilson's Petrel, *Thalassidroma Wilsoni*, Bonap.—A specimen of this bird was kindly presented to me, in August 1840, by Mr. Glennon, of Dublin, who believed it to have been obtained in Ireland, but

* Mr. R. D. Fitzgerald, jun., Tralee.

† 'Brit. Birds,' vol. iv. p. 262.

did not preserve any record of the locality. The species cannot, therefore, from this individual, be included in the Irish catalogue, but there can be little doubt, from the distribution of the bird, of its occasionally visiting Ireland. A few individuals have been procured in different parts of England; but none as yet in Scotland (Jard. Macg.). Mr. Gould, in a most interesting communication made to the Zoological Society of London, on the birds met with at sea during his voyage from England to Van Diemen's Land, informs us that "immediately off the Land's End, Wilson's storm-petrel was seen in abundance, and continued to accompany the ship throughout the Bay [of Biscay]."*

Two of these petrels, taken by young friends on the voyage from Liverpool to New York, in May 1846, were sent to me. They were procured after the bank of Newfoundland had been passed, by cotton threads being suspended over the stern of the ship, among which the birds' wings became entangled as they flew.

Bulwer's Petrel, *Thalassidroma Bulweri*, Jard. and Selby.—One individual only, obtained in Yorkshire in 1837, was known to have occurred within the British Islands, at the date of publication of the 2nd edition of Mr. Yarrell's work in 1845. A second, procured at Scarborough in the spring of 1849, has since been recorded.†

THE STORM PETREL.

Mother Cary's Chicken.

Thalassidroma pelagica, Linn. (sp.)
Procellaria „ „

Is to be met with at all seasons about some parts of the coast, and breeds in several of the islets.

To begin with its most northerly breeding-haunts:—in 1832, we were informed that "these birds breed in great numbers in Tory Island [off the north-west of Donegal], in the rabbit-holes,

* Zool. Proc. 1839, and 'Ann. Nat. Hist.,' vol. v. p. 139.

† E. T. Higgins, in 'Zoologist' for September 1849, p. 2569.

like the puffins; from which circumstance," the writer adds, "I have been able to get numbers of them alive: they scarcely ever approach the mainland."* A gentleman going out in a boat, three miles from Dunfanaghy, on the 2nd of August, 1850, saw some of these birds on wing above the sea. Mr. G. C. Hyndman, who spent from the 6th to the 8th of August, 1845, on Tory Island, supplied me with the following information. *Thalassidroma pelagica* breeds in numbers within the rabbit-burrows of the cliffs on the northern side of the island, out of which boys drew them with their hands. When so far in that this could not conveniently be done, the entrance was broken away until the bird became within reach: a single nest was in each burrow. A number of eggs (about a dozen) were procured, and about half-a-dozen young birds, all in the down, but of different ages. Fully twenty old birds were taken, and many more could have been. About the half of those caught were given their liberty, and on being let off from the top of the cliff, perhaps 300 feet high, they shot in a straight line down towards the water. My friend did not see the nests, as the little boys wished to keep him in ignorance of them, lest he should get for himself what he gave them money for. He observed them putting their ears to the holes, to ascertain whether birds were within; only one egg or one young bird was taken in any nest, but it could not be ascertained whether more than one old bird was ever within the aperture. One of the old captives, when in his hand, warbled some sweet notes, which resembled those of "the swallow twittering," but of a stronger tone. Several ejected food from the stomach, apparently the remains of fish: no oil was expelled by any of them from their nostrils. From the circumstance of these birds being generally seen at night, which is their natural preying-time, the people here imagine that they would be killed by the gulls if they ventured out by day, and hence, that they remain concealed.

A reward was offered for a fork-tailed petrel (*P. Leachii*), and one was soon produced, "made to order" on the instant, by the middle tail-feathers being extracted, and the outer one at each

* Mr. J. V. Stewart, in Loudon's 'Mag. Nat. Hist.' vol. v. p. 584.

side left; the manufacturer, ten or twelve years of age, came forward, seriously claiming the reward of a shilling for this fork-tail.

I was told by the late Mr. John Nimmo, of Roundstone, respecting the Galway coast, that a few pair breed in Deer Island, and the adjacent Hards, or Cruagh, rocky islets. The nest is situated under stones, and a single egg deposited on the ground. When at sea, off that coast, he very rarely, and only in stormy weather, met with this species, which is there called *Martin-oil*, a name *Thal. Leachii* also bears. With respect to the Hards, I have since learned from Dr. Farran, that he and the Rev. George Robinson, who accompanied him to Connemara, in the summer of 1844, had two storm petrels brought to them alive on the 1st of August, which were captured in their nests under stones, where more might have been procured. "It was no difficult task to take the poor birds from the crevices of the rocks: they seemed to labour under complete paralysis, as if unable to stir from their nests, or make the slightest effort to escape." In August 1838, I was favoured by the Rev. T. Knox with the skin of one of these birds, of which a couple had been sent to him from Sybil's Head, county Kerry: at the Blasquet Islands, off this coast, a petrel has long been known to breed, and this specimen suggested that it is *Thal. pelagica*. In Smith's 'History of the county of Kerry,' printed in 1756, we have the following notice:—"There is a small bird which is said to be peculiar to these islands, called by the Irish, *Gourder*, the English name of which I am at a loss for, nor do I find it mentioned by naturalists. It is somewhat larger than a sparrow, the feathers of the back are dark, and those of the belly white; the bill is straight, short, and thick; and it is web-footed. When they are first taken, the country-people affirm that they cast up about a teaspoonful of a very fetid oil, out of their bills: they are almost one lump of fat; when roasted, of a most delicious taste, and are reckoned to exceed an *ortolan*, for which reason the gentry hereabouts call them the Irish ortolan: these birds are worthy of being transmitted a great way to market, for ortolans, it is well known, are brought from France to supply the markets

of London"! Whether or not this hint was taken advantage of, later historians do not inform us.

In a communication descriptive of a portion of the West of Kerry, made by Mr. William Andrews to the Natural History Society of Dublin, and published in 'Saunders's Newsletter' of November 9th, 1841, it is remarked—"In the month of August, the islands [Blasquets] are deserted by the feathered tribe, with the exception of the storm petrel (*T. pelagica*). This little bird breeds there twice in the season—in the month of June and again in August—laying but one egg each time of incubation. Numbers of them may easily be taken during the day in holes under rocks and in banks—the whistling of the young bird, or the purring challenge of the old, betraying their retreat. I did not meet with more than one young bird in each nest, several were scarcely freed from the shell [no date is given]. The young birds are singularly large and full in appearance, and contain an immensity of oily matter, which renders it difficult to preserve a specimen. The old birds, at the time they have their young, do not eject the oil so generally as at other times on being captured; although strong and untiring on the wing, yet on the ground they appear feeble, staggering, and resting on the tarsi. Placing several on the ground, sheltered from the breeze, I found that they were wholly unable to rise. They are named by the islanders, *Gourdal*." Mr. R. Chute, who has visited the large Skellig rock twice or thrice in the breeding season, states that the stormy petrel nidifies there. Since the lighthouse was erected, this bird and the Manx shearwater have been the chief birds resorting to it for that purpose.

My notes bear witness as follows to the occurrence of the storm petrel on the coast or inland, omitting for the present the individuals obtained after the great hurricane of January 1839. First, with respect to the north-east of the island:—Mr. Samuel Lyle one day, either in the winter of 1829–30, or the following, when out in a yawl for the purpose of wigeon-shooting in Belfast Bay, shot two of these birds—which he describes as flying like bats;—one was killed about a mile from the town, and the other as

it was on wing over the 'Long Bridge:' the day was rather stormy. It was probably before this time that a storm petrel, taken about the river Lagan, near Lisburn, was sent to the Natural History Society of Belfast. At May's embankment, close to this town, one was found dead. In October 1832, after stormy weather, one endeavoured to alight in a small boat in Belfast Bay, but was frightened off; in making a second attempt, however, when the boat had proceeded about a mile farther, it was struck down with an oar, and secured alive. On the 5th of December, 1833, a bird was shot at Lough Neagh: there had been a gale from the west and north-west for several days previously. In the beginning of December 1836, one was taken near Comber, county Down. In the 'Northern Whig' newspaper of September 15th, 1838, it was stated, that—"a stormy petrel was found on the 23rd of August last, at Hockley, near Armagh; it was recently dead, and its plumage unruffled, but its condition poor. It may be presumed that it was carried by the violent gales of the 20th and 21st of August, to this unusual distance from the sea, and died of exhaustion." On October 30th, 1838, a bird, in a fresh state, was sent to Belfast from Toome, near to which place it was captured when flying above the river Bann. This species is said to be not unfrequently seen on Lough Neagh in stormy weather.

Two storm petrels (*T. pelagica*?) have been obtained at Brown Hall in the county of Carlow; one after a storm in December 1831; the other in November 1835.* A letter from Mr. R. Davis, jun., of Clonmel, dated August 14th, 1844, mentioned that he had lately received a living bird of the species, found on a mountain south of that town:—a previous letter (August 10th, 1838) had announced his having just received two recent specimens which had flown on board a fishing-boat at Dungarvan, county Waterford, and were taken alive. Mr. R. Ball once observed storm petrels flying up and down a bog-drain, at about one hundred yards from the sea in the county of Cork, apparently searching for food. About the month of August this gentleman has often seen these birds in the bay at Youghal, and on one oc-

* Mr. T. W. Warren.

casion, so many as twenty in a flock. They were once so tame, when the weather was gloomy, though not very stormy, as to come close to the gunnel of the small boat that he was in, to which they were afterwards attracted by bits of sprats laid there for them. One bird ventured twice or thrice to carry off portions of the fish. On another occasion one appeared desirous of perching on the mast of the boat, and made several vain attempts to do so. During a prevalence of rather stormy weather, in November 1835, a storm petrel was found dead near Bandon, county Cork. In a garden near Waterford, and five miles from the sea, a dead one was picked up in October 1848.* This species is remarked to be sometimes seen after very stormy weather in Bantry Bay, and frequently in fine weather off Cape Clear and the Mizen. On the eastern coast it does not thus appear :—Mr. R. J. Montgomery, who has had much experience in shooting about the bays of Dublin and Drogheda, never met with the bird but once—early in September 1850, at the latter place — when a single individual skimmed close past the boat in which he was, while reloading his gun after having fired at a tern.

In a communication which I made to the 3rd volume of the 'Annals of Natural History' (p. 182), entitled—"Note on the effects of the hurricane of January 7th, 1839, in Ireland, on some Birds, Fishes, &c.," it was said of the species at present under consideration—"As may be conjectured, storm petrels (*Thalassidromæ*) were taken in many parts of the country; and chiefly during the latter part of the day of the 7th after the hurricane had ceased. At two o'clock P.M., or just about its termination, one of these birds was picked up alive, but in a very exhausted state, in one of the streets of Belfast, and two were found dead near the Castle, Lisburn. On the 10th inst., two others, one of which I saw, and found to be *T. pelagica*, were taken—the one alive, the other dead—beside a spring-well at Seymour Hill, about four miles from Belfast. Near Saintfield in the county of Down, distant about ten miles, a petrel was said to have been obtained after the hurricane.

* Dr. R. J. Burkitt.

"Mr. Glennon, bird-preserver, Dublin, states that a specimen sent to him for preservation, was procured on the 7th in one of the streets of the town of Cavan, and that on the same day another was found at Brown Hall, county Carlow. Mr. C. Carleton L'Estrange informed me, that when woodcock-shooting in the plantations at Colonel Eniry's demesne some miles from the town of Cavan, about a week after the 7th of January, he found two petrels which had evidently been dead for a few days, or from about the time of the hurricane: they were too much injured by exposure to the weather to be preserved. Mr. R. Ball was sent a *Thal. pelagica* from Kells, county of Meath, where it was procured on the 7th—on which day a petrel, picked up near Mullinger, county of Westmeath, was sent to a gentleman of my acquaintance in Dublin; and on this day also I have been informed that one was found dead near the town of Wicklow. Of all these specimens I have seen but the two noticed as *T. pelagica*; of two or three others I could not obtain information sufficiently satisfactory to enable me to judge whether they were of this or the fork-tailed species (*Thal. Leachii*); but the remainder were described in such a manner as to leave no doubt on my mind as to their being the *T. pelagica*. Of the petrels that I had before seen, and which were obtained at various times and places throughout Ireland, about as many were of the *T. Leachii* as of the other, considered the more common species.

"There have been different conjectures as to the cause of the petrels' appearance on land, but in this instance, when more of them were found scattered over the country than on any previous occasion, immediately after the greatest hurricane that has, within the memory of the oldest persons, swept over Ireland, we are compelled to attribute their presence to its agency alone. From several of these birds having been found in the extreme east, as well as the more central portion of Ireland, it would seem, from the fact of the hurricane ranging from the north-west to the south-west, that some of them had been blown from the Atlantic, almost entirely across the island, a circumstance which, strange as it may appear, is less singular than

their occurrence on a more ordinary occasion in the very centre of England."*

On questioning our bird-preservers respecting the condition of the storm petrels skinned by them, they stated, as was anticipated, that they had obtained them in excellent, as well as poor condition. When a storm, coming suddenly on, drives them to land, the birds may be expected to be in good order, as they may the reverse when only driven inland after its continuance for some time.

Mr. Harry D. S. Goodsir, of Edinburgh, informed me that in the month of October 1843, hundreds of these birds appeared about Anstruther, on the coast of Fifeshire, after a storm from the east. Some of them appeared about the town, but as the storm died away, they gradually went farther out to sea. He one day followed them, and in a heavy sea captured thirty, by flinging pieces of the liver of cod-fish over the gunnel of the boat, when several fighting for the food were caught at a single sweep of a landing-net: single birds, too, were captured by the hands of the boatmen. The following day my friend took about fifty in the same manner, and many more might have been procured, had he not cried, "hold, enough." He particularly remarked several of them to be completely immersed in the water by the impetus with which they descended from the air upon the food. He preserved a number of specimens in spirits, with one of which I was favoured.

In the month of April, 1841, several small storm petrels came under my observation in the Mediterranean, though not so near that the species could be determined. On the 16th, one of small size appeared, flying like a swift (*Cypselus*) over the surface of the water, to the southward of the Straits of Messina; on the 23rd, when about eighty miles east of Malta, two or three were seen at some distance flying like swallows, and a couple of others were

* In the 'Magazine of Natural History' for 1832 (p. 283), two petrels are recorded to have been found dead at Birmingham in December 1831; one was discovered in a street of the town, the other at a few miles' distance. The Rev. Mr. Bree of Allesly, who saw the former specimen in Weaver's Museum, has informed us that it is the fork-tailed species, *T. Bullockii*.—Ibid. p. 733.

observed sporting in company, after the manner of these birds; on the 25th, when about one hundred and twenty miles east of Etna, and sixty from Calabria, a few of them were remarked for some time a little astern of the ship: their dipping in the water is like that of the swallow, but continues rather longer, perhaps that they may skim the surface for food.—27th. Sixty miles west of the Morea, I saw one with a very large patch of white above the tail skimming the surface of the sea. The wind was very moderate, and from various points; the weather fine when all these birds were seen.

A gentleman of my acquaintance states that during a voyage from Liverpool to Canada, when storm petrels (species?) could not be seen from the vessel, the sailors would bring them to view by throwing overboard greasy matter which they call *slush*. Mr. Hewitson, too, in giving a very interesting account of this bird as observed at the Shetland Islands, remarks, that the fishermen there, "though they have not previously seen one, are sure to be surrounded by them upon throwing pieces of fish overboard." He states also, as has been said of those in their Irish breeding-stations, that they are easily captured on their nests.

Audubon, in the following note, mentions different species of storm petrel congregating together:—"In August 1830, being becalmed on the banks of Newfoundland, I obtained several individuals of this species [*T. pelagica*] from a flock composed chiefly of *T. Leachii* and *T. Wilsonii*," vol. iv. p. 310. Wilson is very eloquent on what he believed to be the *T. pelagica*, and gives from personal observation on the coast of the United States an admirable account of it: his bird, however, is a different species, and in honour to him has been named *T. Wilsoni* by the Prince of Canino. Wilson remarks, that when passing along the shores of Florida and the Carolinas, these birds made their appearance in all weathers.*

* Jardine's edit. Wils. Amer. Orn. vol. ii. p. 385.

In the order NATATORES, the following birds are enumerated at the present time in the British, and not in the Irish, catalogue. A few of the leading points respecting them have been already given in connexion with the species to which they are most nearly allied, so that little more is now to be done than to bring them together here.

BRITISH AND NON-IRISH SPECIES.

Polish Swan	*Cygnus immutabilis,* Yarr.
Pink-footed Goose	*Anser brachyrhynchus,* Baill.
Spur-winged Goose	„ *gambensis,* Linn. (sp.)
Bimaculated Duck	*Anas bimaculata,* Penn.
Steller's Western Duck . .	*Polysticta** *Stelleri,* Pall. (sp.)
Red-crested Whistling Duck .	*Fuligula rufina,* Pall. (sp.)
Ferruginous or Nyroca Duck .	*Ful. leucophthalmos,* Bechst. (sp.)
American Scaup Duck . . .	*Ful. mariloides,* Vigors.
Harlequin Duck	*Clangula histrionica,* Linn. (sp.)
Buffel-headed Duck . . .	„ *albeola,* Forst. (sp.)
Caspian Tern	*Sterna caspia,* Pall.
Gull-billed Tern	„ *anglica,* Mont.
Ross's Gull	*Larus Rossii,* Rich.
Laughing Gull	„ *atricilla,* Linn.
Bulwer's Petrel	*Thalassidroma Bulweri,* Jard. and Selby (sp.).
Wilson's Petrel	*Thalassidroma Wilsoni,* Bonap.

Of these sixteen species, three have been but once obtained in Great Britain; viz.,—spur-winged goose, a bird of northern and western Africa;—North American scaup, whose name marks its country (it is not known where the individual included in the British list was killed; being purchased fresh in London market affords no evidence of its having been procured in the British seas or inland waters);†—Ross's gull, a species of Arctic America.‡

* Eyton.

† If the *Fuligula ferinoides,* Bartl, since obtained, be considered the same, we have positive evidence of its being killed in England.

‡ Noticed at p. 314.

Three others have been twice procured in Great Britain;—Bulwer's tern, discovered in Madeira, and believed to be found about the Canary Islands;—Steller's western duck, a native of the more northern parts of Europe, Asia, and America;*—and buffel-headed duck, a North American species.

Five others have been very seldom met with;—bimaculated duck, a bird of Northern Asia; very little is known respecting it in any country;—red-crested whistling duck, belonging to the eastern and more southern half of Europe, part of Asia, and North Africa;—harlequin duck, a northern species of Europe and America;—laughing gull, a North American bird, found also along the southern coasts of Europe;—and Wilson's petrel, an inhabitant chiefly of the North American seas.

Two species found only in the eastern hemisphere (in Europe, Asia, and Africa), are occasional visitants to England, which is the western limit of their migration. These are the ferruginous or Nyroca duck, and Caspian tern, both of which have been chiefly met with in the east of England.

What has been said of the last two is equally applicable to the gull-billed tern, with the addition that it is now considered identical with a North American species, the *S. aranea* of Wilson.

The remaining two have only of late years been recognized as distinct species, hence their geographical distribution has yet to be learned. These are the Polish swan, which has been procured on the Baltic Sea and the eastern coast of England; and the pink-footed goose in France, Holland, and Belgium, as well as England and Scotland.

Of the preceding sixteen species, three only have been obtained in Scotland (Jard.; Macg.; Yarr.);—pink-footed goose, harlequin duck, and buffel-headed duck. The Nyroca duck was once procured by Sir William Jardine, in Edinburgh market, but it was not known where it had been killed.

It is considered unnecessary to go over the same ground here in drawing inferences from the geographical distribution

* At p. 118, the second individual (obtained since the publication of the 2nd edition of Yarrell's work) has been noticed.

of the species that was done in summing up the preceding Orders, what has been already said in those instances being equally applicable to the *Natatores*. It may however be observed, that one half of these species, being found in North America, might as readily have occurred in Ireland as Great Britain.

IRISH AND NON-BRITISH SPECIES.

Ruppell's Tern	*Sterna velox*, Rupp.
White-winged Black Tern .	„ *leucoptera*, Meissner and Schinz.
Noddy Tern	„ *stolida*, Linn.
Bonapartian Gull	*Larus Bonapartii*, Rich. and Swains.

The first is a bird from the extreme south-east of Europe;—the second is chiefly a summer visitant to the more southern countries of Europe;—the third, having been seen, though not obtained, in St. George's Channel, since the two were killed on the Irish coast, should not, perhaps, be included here: it is a well-known bird of the Atlantic and West Indian seas;—the Bonapartian Gull is a North American species.

APPENDIX.

APPENDIX.

Order RAPTORES.

Spotted Eagle, vol. i. p. 13.

July 1850. I received the following additional information from Mr. G. Jackson (gamekeeper to the Earl of Bantry), of whose correctness as to the species I have no doubt. His statement is:—"Last year (1849), a very young bird was brought to me, by a country-boy, for sale, which I, not having then heard of the spotted eagle, thought was a young golden one. I declined buying it, but the bird was purchased by the innkeeper at Glengarriff. As it became older, and the plumage more mature, I saw that it was not the golden eagle; it was a beautiful bird, but not much more than half the size of that species. The description of the spotted eagle in your work is perfectly applicable to it. Before I knew this, it was sold to a tourist for £3; the bird was bred in one of the mountains here [Cork], called Hungry Hill."

In a letter which I had from Dr. Harvey, of Cork, dated February 16, 1850, he mentions that the Messrs. Parker have lately seen about their residence in the neighbourhood of that city, "a small eagle, with yellow bands on his wings," which they believe to be *A. nævia*. The series of spots on the wings of this species would probably have a banded appearance.

Dunvegan Castle, Skye, October 1850. It is not improbable that the spotted eagle has occurred in this island. On my questioning Mr. Pack (who has been resident here for fourteen years, and eleven of them as gamekeeper) respecting the birds of Skye, he described a *spotted* eagle—though he had never heard of a species being so called—having been killed by one of the shepherds of the late Mr. Macleod, of Orbost, about the year 1840. Soon afterwards, he himself saw another, and subsequently, within a short time, either a second bird or the same individual again. The size he does not accurately remember, though he recollects that it was liker to the golden than the sea

eagle; the spotting which he describes would apply correctly to the bird in question. He, and others who saw the individual which was shot, considered it quite distinct from the golden and sea eagles, and the osprey, all of which are found there.

Osprey, vol. i. p. 29.

October 18, 1848. Dr. J. R. Harvey, of Cork, wrote at this date, informing me that a very fine specimen of this eagle had been shot on the 14th of the month, by William Crawford, Esq., in his lawn at Lakelands, in that neighbourhood. The bird attracted attention by the circles it made around a tree before alighting on it. A mullet, about 1 lb. in weight, was in its grasp when shot, and was retained until both bird and fish were exhibited in the house. This osprey was 2 feet 1 inch in length, 5 feet 4 inches across the wings, and $4\frac{1}{4}$ lbs. in weight. My informant, judging from size and plumage, supposed it to be "a young female of perhaps last year, as the tawny patch on the upper part of the breast was well marked, and each feather had a distinct central brown spot; the feathers, too, of *all* the upper parts, even to the tail and quill feathers, were tipped and edged with whitish."

Greenland Falcon? vol. i. p. 31.

I have examined a specimen which was sent from Ballina, at the end of December 1847, to Mr. Glennon, and is now in the collection of Mr. Watters, Dublin. It is a young bird of the year. As noted when recent, its bill and legs were blue, the cere yellow. From possessing "*one* large process in upper mandible," and having the bars towards the tip of the tail continuous, I look upon it as the *Falco Grœnlandicus*, described and figured by Hancock in the 'Annals of Natural History' (vol. ii. pl. x.); the feathers, too, are broad, like the one figured of that species. Opposed to this view, the bars on the tail above the few next the tip are somewhat alternate, but not nearly to the degree represented in Mr. Hancock's figure of *F. Islandicus*; in fact, the bars on the tail, except at the tip, are intermediate between those of *L. Grœnlandicus* and *Islandicus*, represented in this gentleman's memoir.

Hobby, vol. i. p. 49.

I there expressed doubt of its having been the real *Falco subbuteo*

that Mr. Templeton met with in Ireland. I have since seen a note in that gentleman's journal, which proves my doubt to have been too well founded. Under "December 10, 1819" it appears he on that day "saw a *F. subbuteo* in the collection of Mr. John Montgomery." This collection, however, which was known to me at all times, never contained the hobby, properly so called.

Honey Buzzard, vol. i. p. 77.

May 1849. I saw one of these birds in the possession of Mr. Glennon, Dublin, of which he gave me the following account. The bird was sent to him by Captain Charles Dunne, of Ballynacargy, Baronston, on the 6th of April that year, and was said to have been observed there for two years during summer and winter (?). Captain Dunne, having often seen it knock down a coot for food, had one of these birds killed, and its flesh poisoned with strychnine, as bait for it. A few days afterwards the buzzard was found poisoned on the lake which the coots frequented. We should rather have expected what is related here to apply to a marsh harrier than to a honey buzzard.

Marsh Harrier, vol. i. p. 78.

November 17, 1849. Five of these birds came under my notice to-day, in the shop of Mr. Glennon, by whom I was informed that he had received nine altogether within the last ten days. They were all either shot or trapped at a small lake at Ballynacargy, where the honey buzzard, just mentioned, was obtained. As many wild ducks are on the lake, it was considered that they had tempted the marsh harriers to it, and the ducks being strictly preserved, war was waged against their supposed enemies. All of the five birds which I saw had more or less buff on the head, and the other four were said to have been similar in this respect.

Snowy Owl, vol. i. p. 95.

A fine specimen, 2 feet in length, 4 feet 10 inches in expanse of wings, and 5 lbs. in weight, was shot on the 22nd of February, 1850, when flying above a turf bog, near Lurgan, county of Armagh:—it admitted the close approach of the fowler. Black and white are nearly in equal proportions in its plumage, excepting that on the face, and throat, and beneath the wings, it is white. In its stomach were

the remains of a little grebe, partly digested, the leg of a bunting, and what appeared to be the tarsus of a partridge. This owl was sent to the museum of Trinity College, Dublin, and for the information respecting it I am indebted to Mr. R. Ball.

Order INSESSORES.

Great Grey Shrike, vol. i. p. 111.

In May 1849, I was informed of one having been killed by John Riall, Esq., about eighteen or twenty years previously, at Ballycorris bog, county Dublin.* *August* 10, 1850. Mr. Watters states, that he followed a shrike to-day for a considerable time on Montpelier, one of the Dublin mountains, and discharged two shots at it unsuccessfully. The bird was most difficult of approach, its flight very strong and undulating, like that of a wagtail.

Missel Thrush, vol. i. p. 121.

By reference to the late Mr. Templeton's papers and drawings, I have ascertained the date when the first of these birds (so far as known) was observed in the north of Ireland. On *February* 3, 1808, he made a coloured drawing of one "received from John Sinclaire, Esq., who shot it at Redhall a few days before."

Golden Oriole, vol. i. p. 154.

An adult male bird, which has come under my notice, was shot on the 21st of April, 1850, near Duncannon Fort (county Wexford). Dr. C. Farran, in May 1850, mentioned the occurrence of a pair of these orioles about five years previously, at Dungarvan (county Waterford). These birds were observed by Mr. Dyer to fly back and forward over the bridge at that town so long, that he thought they might remain there until he procured his gun, which he did, and shot the male. This bird was preserved. Three or four days afterwards the female was shot at the same place, but was rejected as not worth preserving, on account of her comparatively dull plumage.

Black-cap Warbler, vol. i. p. 183,

May be considered a regular summer visitant to the vicinity of Dublin, as I am aware of its occurrence there for the last eight years successively.

* Mr. T. W. Warren.

YELLOW WAGTAIL, vol. i. p. 221.

In addition to what has been stated of this bird about Toome, at the north-west of Lough Neagh, it may here be mentioned that Mr. Templeton, on the 3rd of June, 1812, saw two of them on the shores of Ram's Island, that from his description must have been adult males. They are common in summer on part of the southern shores of that lake, as first observed by the Rev. G. Robinson, of Tartaraghan rectory. Many were seen by that gentleman, in the summer and autumn of 1849, about Miltown and Maghery; but none were observed more than about a mile and a half inland from the lake. He has frequently remarked the male bird when approaching the female, *fanning* its tail along the ground, like a pigeon. One day in August, eighteen old and young birds were reckoned by him during a drive of two miles along the borders of the lake. Early in September they had all departed.

April 13, 1850. The Rev. G. Robinson first saw these birds for the season about Lough Neagh, when seven came under his notice as he drove along the road.

May 4, 1850. I went, with Mr. J. R. Garrett and Mr. Darragh, to Mr. Robinson's, that he might accompany us to the wagtails' beat, and on Derrywarragh island we saw not less than forty of them. In one little piece of pasture three pair appeared within twenty-five yards of each other, and three or four birds were frequently seen only a few feet apart on the ground, or on wing, at the same moment. The places they frequented were various in character. Sometimes they appeared about the cattle, close to their heads or feet, but more were seen away from them on the drier pasture. Some were in moist, natural ground, from which many shrubby willows grew spontaneously to the height of about ten feet. On these they often alighted, and frequently rose a short way into the air above them in pursuit of flies. Their attitudes, when they so far expanded the tail as to exhibit the black central and pure white marginal feathers, rendered their appearance very beautiful. They were also seen on tall trees. Some were on the grassy or stony margin of the island, near the edge of the lake. They were everywhere very tame. Their call-note—quite different from that of the pied and the grey wagtails—was as described by Yarrell, but occasionally they uttered the one note only. Their nests were said to be often found upon the ground in arable fields. Mr. Robinson had seen these birds commonly in the fields within a mile of the lake,

but not more distant from it in this quarter. Derrywarragh should be a good locality for the *pied wagtail*, but we did not observe one on it, in the course of three hours, nor did a grey wagtail appear anywhere to-day; the island, however, is not a place where we should expect to see the latter,—no little rivulet, &c., there. The stomachs of five of the yellow wagtails, procured as specimens, were filled with perfect insects, *Diptera*, *Coleoptera*, and a *Notonecta*, but nearly all were "flies."

About the 1st of August, 1849, a few yellow wagtails, perhaps one family, were in company with a number of pied wagtails at the Kinnegar, Belfast Bay. A mile southward of this place one was observed on the 25th of July, 1850, and two following days. On the 28th, an old female and a young bird were found at the same place, and admitted of an approach within a few yards; on the 29th, three or four appeared here. On the 3rd of August one was seen among a flock of pied wagtails on the sands at the Kinnegar. All of these were observed by Mr. J. R. Garrett, and some of them by myself.

May 15, 1849. A yellow wagtail was seen on the banks of the Dodder, near Dublin.*

Bohemian Waxwing, vol. i. p. 229.

We have no record of these birds having distributed themselves so extensively over the British Islands as they did in the winter of 1849–50. Over England they were scattered, and across the breadth of Scotland, from the German Ocean to the Atlantic. In the 'Zoologist' for 1850, the particulars of their occurrence in those countries will be found.

About the same period, they were widely dispersed over Ireland, even to the most south-western county,—Kerry. At Miltown there, two were seen towards the end of December, and one of them shot. Three or four appeared a few miles to the south-east of Cork, early in January, one of which came into the possession of Dr. J. R. Harvey. On the 17th of this month, an adult male having five waxen plumelets in each wing, was shot at the White Rock quarry, Belfast mountains; its stomach was wholly filled with very small fruit of a species of wild-rose. About the same time, several were seen, and one of them killed, near Ballymena, county of Antrim. One, received by Mr.

* Mr. Watters.

Glennon, on the 21st, was said to have been sent from Wexford. On the 19th, 22nd, 23rd, and 25th, single individuals were shot in the county of Dublin. Two of these birds had been feeding on haws of the white-thorn; it was stated of one whose stomach was entirely filled with them, that missel-thrushes attacked, and drove it from a hedge into the middle of a ploughed field; perhaps on account of its partaking of their food. At the end of January, a flock of redwings were fired at near Ruskey (county Roscommon), and among the birds killed were two waxwings; about the same time two others were killed at Lanesborough, county Longford.

Hawfinch, vol. i. p. 259.

This species has been at least twice procured at Glengarriff (county Cork);—January 20, 1844, being one of the dates. One of these birds, shot, it was presumed, at Mountstewart, county Down, was sent by the Marquis of Londonderry, on January 31st, 1849, to Belfast, to be preserved; its stomach was filled with large leguminous seeds, the size of ordinary peas. In February and March 1849, they were unusually frequent in the Phœnix Park, Dublin; several were killed there in the latter month. In the first two weeks of April 1850, a pair was seen at Ballibrado, county Tipperary, and the female shot.

Siskin, vol. i. p. 264.

This bird seems to be at least an *annual* visitant to some parts of the island. From what Mr. John R. Kinahan heard of it at Annagh (county Tipperary), it would appear to be resident there, where it is called the yellow goldfinch. He saw it in that locality early in June (1849), and was told that its nest is usually built in the willows which fringe the banks of the Little Brosna. This gentleman mentioned, in March 1849, from his own observation, that Sandymount marsh, near Dublin, had been frequented by a pair of siskins, in spring, autumn, and winter, for the preceding three years; he had not the opportunity of observing them there in summer, but is of opinion that they most probably remain at that season also, from his having remarked a pair in a neighbouring field in June 1848.

Early in January 1849, siskins were observed feeding on the alder, in a glen two miles from Castle Warren (county Cork), and were occasionally seen there until the 7th of February, when a flock of

about thirty appeared. During the following winter they were in tolerable plenty near Cork, where Dr. Harvey considers that some have been every year of late. Early in November, numbers of these birds were seen at Castle Rea, Killala (county Mayo), and during the month, many—in one instance, a flock of not less than eighty—in the neighbourhood of Dublin. December 1850. They have been for some time about Tartaraghan (county Armagh).

Mountain Linnet, vol. i. p. 272.

This bird is more generally distributed and less confined to heathy mountain tracts than might be inferred from the remarks on it in Vol. I. It has, for the last two summers, been remarked as common, and breeding on the mountain sides, and occasionally on the wild sea-shore among furze or whins, in many parts of Antrim and Down. It breeds commonly, and remains all the year on the low heathy tracts adjacent to, and little elevated above the surface of, Lough Neagh.

Crossbill, vol. i. p. 276.

Seems now to be more than an "occasional visitant." Since Vol. I. appeared, the information communicated to me is as follows. *July* 20, 1849; two shot near Londonderry; great numbers at Castle Rea (county Mayo), at the same time; on the 26th of that month, a flock of about thirty was seen at Crowhill (county Armagh). Two, killed in Queen's-county, in the middle of November, and others early in December. They are still (November 1849) in large flocks at Castle Rea. From November 1849, until March 1850, some were procured in the counties of Dublin and Wicklow. 1850. *April* 22. Two were killed at Crowhill. On the 8th of June, some were seen, and one was shot near Belfast. *September*. "Crossbills have been at Ballibrado (county Tipperary) for the last twelve months or more, and, we may infer, bred there."* They were considered to have remained for more than a year at Castle Rea, and were perhaps resident about Crowhill within the periods mentioned.

Starling, at vol. i. p. 289,

Is remarked as having, after an absence of very many years, returned to nidify within the town of Belfast. It has continued to do so, and

* Mr. R. Davis.

has built in the neighbourhood at places where it had never appeared before. It came in the same year for the purpose of building, to Carrick, in the county of Armagh, and to different country seats about Dublin, where it was before unknown, and has been gradually extending its boundaries since.

Greater Spotted Woodpecker, vol. i. p. 342,

Is noticed there, lastly, as visiting Ireland in 1848. It has appeared in the two succeeding years. On the 18th of February, 1849, one was seen at Wolfhill, near Belfast. It first attracted attention by a tapping sound heard at about twenty yards' distance from a house, when the shutters of the windows were closed. The bird was seen very near on that occasion, and twice or thrice afterwards within ten days, being always engaged at the time peeking into the decayed portions of poplars. Mr. Glennon informed me, in May 1849, that one (displaying the crimson plumage on the under tail-coverts) was sent to him at the end of April that year, from near Carrick on Suir, and that it was the fifth fresh bird he had known to be killed in the winter of 1848–49. Early in November 1849, one was reported to him as seen at Castle Rea, Killala. On the 6th of January, 1850, a fine male bird was captured at night in the aperture of a tree, at Malahide (county Dublin), and brought alive to Mr. R. Ball on the following morning. It was placed in a wire rat-trap, from which its efforts to escape during the day were incessant, and by constantly striking at the wires it broke several of them. On the 19th of this month, one of these woodpeekers was stated to have been obtained at Tramore (county Waterford).

Green Woodpecker, vol. i. p. 343.

A bird of this species, disabled by the blow of a stone when ascending the trunk of a tree at Kilshrewley, near Granard, county Longford, was captured by the gamekeeper in presence of Dr. H. Edgeworth and Dr. Gordon (Hume-street, Dublin). It was kept alive for two days, intending to be brought by the latter gentleman to Dublin, but, having then died, was thought no more of and lost as a specimen. (Mr. R. J. Montgomery.)

Lesser Spotted Woodpecker, vol. i. pp. 343, 344.

January 1851. Mr. Glennon, of Dublin, states that in the course of many years he has preserved at least six or seven of these birds,

sent to him from various parts of Ireland. The last two came under Mr. Watters's notice in a fresh state; one of them on the 21st of September, 1848.

Hoopoe, vol. i. p. 355.

One was captured in a field near Bandon (county Cork), in a very exhausted condition, in the autumn of 1847. A fine specimen, shot in the county of Kilkenny at the end of October 1849, came under my notice at Mr. Glennon's. I have seen one which was shot on Hilltown mountain (county Down), about the 20th of April, 1850; its stomach was filled with insect larvæ and perfect Coleoptera. Two were also obtained this month in the county of Cork, as reported by Mr. W. A. Hackett, of that city.

Cuckoo, vol. i. p. 356.

The following interesting communication from John R. Kinahan, Esq., Seaview terrace, Donnybrook, is given in that gentleman's own words:—"On the 17th of June, 1848, whilst watching some of our summer warblers in the Yellow meadows, situated on the banks of the Slade, about $5\frac{1}{2}$ miles from Dublin, near the village of Clondalkin, we observed a cuckoo come skimming across the fields, over our heads, and alight on some trees about 200 yards down the canal, which here almost joins the Slade. Being anxious to procure a specimen, we crossed over the Slade, to the track line, and proceeded towards the trees, which occupied us about five minutes, during which time the bird was perfectly undisturbed. On our getting within range, the bird rose, and again pitched about ten yards farther on, but in such a manner as to be completely concealed by the branches. My companion, Mr. Haughton, followed, and succeeded in winging her. As she was rising a second time she fell into a ditch, owing to the depth of which, several minutes elapsed before we could get her out. Having obtained the bird, I proceeded to kill her, by pressing on her breast, having my thumb on the cavity formed by the *os furcatum*, when I felt something slip from under my thumb with a gurgling noise. Mr. Haughton, attracted by the gurgling, turned at the same moment, and we both saw an egg in the act of falling to the ground, from whence I picked it up, perfectly uninjured. This egg agrees with all descriptions I could obtain, and on being shown to Mr. R. Ball, he at once recognized

it as a cuckoo's; it has since, together with the cuckoo's skin, been presented to the Dublin Natural History Society. From the position of the bird as held by me, it is impossible that the egg could have come from any place but the bird's throat, as, if it had been passed in the ordinary way, it must have fallen on my arm, and thence to the ground on a different spot from that whence I picked it up. On dissection by Professor Allman, the bird proved to be a young female, and had in her ovary two full-grown eggs, one of them ready to pass into the oviduct. In her stomach were the remains of insects and a small portion of vegetable matter, but not even with a powerful microscope could any remains of eggs be detected, clearly showing that the bird was not feeding on eggs;—it was three o'clock, P.M., when she was shot. Do not these facts prove that M. Le Vaillant's observations respecting the African cuckoos (*C. auratus* and *C. hepaticus*) are also applicable to *C. canorus* (common cuckoo), viz., that she carries her egg in her throat, for the purpose of deposition in nests to which she could not gain access in the ordinary way? and may it not be this habit which has gained the cuckoo a name she does not appear to deserve, that of egg-sucker? May not persons have shot her with the egg in her throat, and naturally imagined that the egg was that of another bird, especially as to a superficial observer the eggs of *C. canorus* and *Pyrgitta domestica* (house sparrow) appear identical, though easily enough distinguished when examined closely? In fact, a friend of Mr. Haughton's says he has frequently shot cuckoos with eggs entire in their throats, and that he does not doubt but that they were the bird's own."

A note to the same effect as the preceding was contributed to Macgillivray's 'British Birds' (vol. iii. p. 130), by Mr. D. Weir, but was not given on his own authority.

Order RASORES.

Passenger Pigeon, vol. ii. p. 18.

Individuals which were obtained in Scotland are there noticed. To use the words of Mr. R. D. Fitzgerald, jun., writing from Tralee, in July 1850;—"I had in my possession, about two years ago, a passenger pigeon, which was caught near this town, when unable to fly

from fatigue. From this circumstance, there can, I think, be no doubt that it came direct from America, as a bird of its powers of flight would not have been exhausted unless it came from some very great distance. It never became tame, though I had it in confinement for about two years, at first alone, and afterwards in company with other pigeons. It would walk backwards and forwards in a very shy manner when any one looked at it, and always avoided the other birds."

The account of this individual leads one to believe that *it* may have crossed the Atlantic.

Quail, vol. ii. (preface, p. ix.) p. 66.

The following note is interesting, on account of the inland locality it refers to. *January* 15, 1850. The Rev. George Robinson, of Tartaraghan (county Armagh), informs me that during the late prevalence of frost and snow, great numbers of these birds have been killed about his place. Two or three dozen have sometimes been brought him of a morning on sale; he buys them for twopence each. One winter, some years ago, when staying within a mile of his present residence, and looking for quails, he could not see more than one or two in a day. He never knew them so abundant as this winter.

Mr. Thomas W. Mulholland killed, during part of the shooting season of 1849–50—from November till March,—in the Ards, county Down, about 120 brace. They were all shot within three miles of Springvale House, and many more might easily have been obtained. The greatest number procured in a day was nine brace; they were generally, during the season, in pairs, and a single bird was very rarely sprung. He remarks that a good shot, looking particularly for quails, which he was not, could easily have killed 300 or 400 brace. The former number (300 brace) is stated by the head gamekeeper of Mr. Ker, of Portavo, in the same county, to have been killed by him each shooting season of the last few years.

Order GRALLATORES.

Kentish Plover, vol. ii. p. 104.

Mr. R. Ball informs me that one of these birds, preserved in Trinity College Museum, was shot at Baldoyle (county Dublin), on the 8th of August, 1848, by Dr. Apjohn.

Green Sandpiper, vol. ii. p. 208.

Dublin, December 1849. Mr. Watters purchased here a fresh specimen on November 10, 1846, and another on August 18, 1847; the latter was killed at the North Bull, Dublin Bay: between those dates he saw three other fresh birds on sale. *January 10th and 12th*, 1850. He mentions that at the former date one was killed in the county of Kildare, and on the latter, one was brought to him by a hawker of wild-fowl, who did not know where it had been killed.

Long-legged Plover, vol. ii. p. 221.

The following additional note on this species was kindly sent to me in August 1850, by Mr. R. D. Fitzgerald, jun., of Tralee, but the date of the occurrence could not be ascertained.—"The account which a friend of mine gave me of the black-winged stilt, one of which he shot in Castlemaine Bay, may interest you. When he first observed a small flock settled on the oozy bank of the river, their appearance was very strange, for they seemed to be supported altogether without the aid of legs; on a nearer approach he remarked that they swayed from one side to the other, not with the jerking motion of the red-shank, but as though to steady themselves, and as if their limbs could scarcely support them. Upon shooting one, he was so anxious to secure it, that he neglected to watch what became of the rest. If he had done so, he would, he is sure, have killed more, as they were very tame, and flew up the river; he searched for, but was unable to find them again." The bird was so much injured as not to be worth setting up as a specimen.

Woodcock, vol. ii. p. 248,

Is mentioned as breeding in Gurteen Wood, county Tipperary, in 1841. In June 1850, I learned that some pairs had bred there

annually for the last six or seven years, since the present proprietor came into possession of the place. The following paragraph appeared in the 'Northern Whig' newspaper of May 21, 1850 :—

"On the morning of the 18th inst., Francis Shaw, a man employed by Colonel Stewart to trap rabbits in his demesne of Killymoon, saw an old woodcock, with a brood of young ones, in one of the woods. He caught two and brought them to the mansion, where they remained for some time, until Colonel Stewart ordered them to be taken back to the place where they were caught. They could not fly, but were, nevertheless, of a good size, the head and bill of each being nearly as large as those of old birds. Shaw stated that he had seen seven or eight of these young birds.—Another man employed about the demesne saw five young ones the same day. Several old woodcocks were seen in the woods about Killymoon during the week. Young woodcocks were found there once before within the last twenty years."

The same newspaper of Tuesday the 9th of July, 1850, contained this paragraph :—

"On Saturday last, as a man was mowing grass, in a very quiet spot not far from Cookstown, he flushed a woodcock. On examining the spot whence the bird rose, he discovered its nest, with four eggs in it. The bird did not return to the nest, which was formed of dry leaves, green moss, and a little withered grass."

Both these localities are in the county of Tyrone.

In some parts of Ireland, woodcocks were unusually plentiful at the end of December 1849, and in January 1850. At the former period a number were killed at Knappan (county Antrim), during severe frost and snow; the stomachs of five of these birds came under my examination; four of them were filled with fibrous vegetable matter, and a number of minute coleopterous insects; the fifth was filled with the remains of Coleoptera, with the exception of two or three white larvæ :— they were the fattest birds I ever saw. The chief dealer in game, at Belfast, received thirteen couple from a person living near Glenarm, in the same neighbourhood in the first week of January, and on the 9th of the month, fifteen couple, all of which had been shot. On the 17th, 18th, and 19th of January (frost and snow), he received sixty couple, many of them killed in the vicinity of Belfast; he had never before known them to be so plentiful. In the covers at Stuart Hall (county Tyrone), eleven brace were shot one day early in the month during frost and

snow, and as many more were seen. Until the 31st of December, woodcocks were considered remarkably scarce in Lord Bantry's covers, in the counties of Cork and Kerry, but they became "somewhat more plentiful" in the severe weather of the following month, so that fifteen brace and a half were killed in a day by two guns.

Great Snipe, vol. ii. p. 257.

"Mr. T. Spencer Lindsay, of Hollymount House (county Mayo), assured me that his gamekeeper had killed a brace and a half of 'solitary snipe' in the last two seasons; he knew the bird well. The gamekeeper also described it accurately, and particularly remarked its having two more tail-feathers than the common snipe."—R. J. Montgomery, March 1850.

Scolopax Brehmi,

As mentioned in a letter from Sir William Jardine, on Feb. 25, 1850;—"I have just received from the neighbourhood of Enniskillen a snipe, with its outer tail-feathers longest, and sixteen feathers in the tail. This to all intents is *S. Brehmi*." The bird was sent to Jardine Hall by C. A. Gordon, Esq., of the 57th regiment, then stationed at Enniskillen, whose attention had been specially called to the subject by Sir William Jardine. In this author's work, entitled 'Contributions to Ornithology,' for 1849 and 1850, full particulars of the *S. Brehmi* will be found.

Broad-billed Sandpiper, vol. ii. p. 282,

Was several times seen by Capt. May (late of the Inniskilling dragoons), during his sporting tour on the coast of Norway, in the summer and autumn of 1849. He was attracted by the peculiar snipe-like markings on the head of the bird, and, on seeing the specimen in the Belfast Museum, immediately recognized it as being of the same species. Among the places where they were seen was the extremity of a fresh-water lake, near the Salten Fiord, where they may have been breeding (July 11).

Purple Sandpiper, vol. i. p. 303.

It is there remarked that it "*regularly* inhabits certain parts of the coast in autumn and winter;" to which it might have been added—

"and *occasionally* at other seasons," as the account of the bird which follows would show. In 1850, one of two birds which were together was shot near Ballywalter (Down) on the 22nd of February;—two appeared on the stony embankment of the railway at Conswater, Belfast Bay, on the 8th of March;—and two were shot, from a flock of seven or eight, on the 9th of May, at Roberts's Cove (county Cork).

Order NATATORES.

Great Wild Swan, vol. iii. p. 3.

May 1850. One of these swans, preserved at Lissanoure Castle (county Antrim), was shot on the lake there "ten or twelve years ago."

Bewick's Swan, vol. iii. p. 13.

The Rev. T. Knox has favoured me with a description of a swan of this species killed at Scariff, on the Shannon, on February 2, 1842. A young swan—*C. Bewickii* it is presumed (see p. 21)—was shot on a pond near Dingle (county Kerry), in the winter of 1849–50. In the following season, about the end of November 1850, two of this species were brought to Dublin market.

So early as the end of October 1850, three wild swans (it is not known of what species) were observed for some time within eighty yards of the shore of Belfast Bay, at Raven Hill.

Wild Geese, of different species.

Notes by R. J. Montgomery, Esq., on wild-goose shooting in Mayo, in the present year—from the beginning of February until the end of March 1850—seem to me well worthy of a place here. He remarks—"I shot a great number, though with much difficulty, having either to stalk them regularly, if in the day-time, or to lie in a *blind* for one or two hours before they came to feed at night. Wild-goose shooting is the finest sport I ever enjoyed, and I would go any distance for it. Think of seeing a flock of three or four hundred coming down on one of the lakes where you are advantageously posted both for observing them and shooting." The grey lag goose formerly was very common in Mayo, but is now very scarce. I only saw three while there; one of them I wounded, but failed in getting. I watched them through a

glass, and could distinguish the red colour of the beak and feet. They never associated with the other geese, but invariably were four or five hundred yards from them when on the same bog, and often were to be found on another bog miles from them.* The bean goose is in great numbers, but the most numerous is the white-fronted, in the proportion, I should think, of about fifty white-fronted to ten bean geese: they arrive at Michaelmas, in small parties, which join together after their arrival; the bean and white-fronted remain together, but *not mixed*, and when alarmed each species flies in a separate flock. During the severity of winter they remain on the bogs in the day-time, but often pass from one to the other, and at night come to feed in the *turloghs*, or winter lakes, arriving at a much later hour than the ducks. When spring has replaced winter, they spend more of their time in low bottoms than in the bogs, but always fly to the latter on being disturbed, and about three or four in the afternoon resort to some small lake, where they remain in the middle till towards midnight, sometimes till just before daybreak, when they come to the shores to feed on the coarse grass, or rather on *the roots* of the grass. They take their departure at the end of April, a few remaining till the beginning of May, or, as the country-people say, 'they never go till they have had *three fills* of the green corn.' They congregate from all parts to the small lakes (in particular, one called Kill) for some short time before they go off, and all take their departure in one or two enormous flocks, steering north-east. At Michaelmas, when the geese first come, they are very easily shot. Large numbers of bernacle and brent geese also pay a short visit at that time, in fact, on their way to the east side of Ireland, and again in the end of April, for a fortnight, after their departure from this side of the country. The country-people call the brent geese *American* geese,—why, I cannot tell. They shoot great numbers of bean and white-fronted geese, and salt them. On Easter Monday, the whole male population turn out to shoot geese and hunt for wild ducks' eggs. Some of the white-fronted geese which I shot in the end of March had just got the full black bars on the breast; the boys say they have sometimes found their eggs in the bogs before they go away, but that none ever remain to breed. Two, which I had wounded and could not get, remained on the lake of Kill for a

* In January, this year, a grey lag goose was sent to me from the neighbourhood of Dundalk, and I saw another, from Meath, in the Dublin market.

week or two, and always joined the flock when they came to the lake in the afternoon, swam about and fed with them, and when the main body went off at daybreak, they returned to their hiding-place among the reeds in the middle of the water. At last I went out *on a door*, as no boat could be had, and captured them; one was a bean and the other a white-fronted goose, yet they always kept company after being wounded, until taken.

"The ducks which are most numerous in Mayo are the common wild duck (called 'heavy duck'), golden-eye, wigeon, tufted duck, and teal, all in immense numbers, particularly the last, which, on Lough Corrib, is literally in thousands.

"Wild ducks, before I came away on the 1st of April, were breeding in the ivy on old castles, fully fifty feet from the ground. In the castle of Turin, upwards of eighty feet in height, and covered with most luxuriant ivy, these ducks bring out their young every summer at a great height. This castle is three miles from any piece of water, but not more than a gun-shot from a very extensive and wet bog. The abbey of Ross, another haunt, is close to a river and wet bog, and in the ivy on two castles near to it they also build. The shelldrake breeds at Lough Corrib, and I believe a few pair of the red-breasted mergansers do so. The fowlers positively state that at a part of this lake, most strictly preserved during the life-time of the proprietor (one or two years deceased), the wigeon bred."

Wild Duck, vol. iii. p. 75.

It was omitted to be stated in the account of this bird, that it frequently breeds on the ground in marine localities, such as the Mew Island and the islets in Strangford Lough, or anywhere on the borders of the sea-coast where it will be free from disturbance.

Wigeon, vol. iii. p. 98.

Mr. R. J. Montgomery, writing in September 1850, mentions that an observant man (O'Neill), in the coast guard service, states that he knew wigeon to breed in the island of Achil, where he was stationed for several years.

Velvet Scoter, vol. iii. p. 122.

About the first week of September 1850, three of these ducks were seen in the Bay of Drogheda, by Mr. R. J. Montgomery. This is the

great haunt of the common scoter on the Irish coast. Of this latter species, the Rev. G. M. Black, when sailing off the Skerries and Balbriggan, saw several small flocks so late as the month of April (1850).

Tufted Duck, vol. iii. p. 141.

The Rev. G. Robinson, writing to me on the 25th of April, 1850, remarked, that tufted ducks are still on Lough Neagh, and are wild, not admitting the approach of his boat within eighty or a hundred yards before taking wing. On the 4th of May I saw one of these ducks on the lake, and learned from a fisherman at Maghery, that they, pochards and golden-eyes, are commonly taken in the fishing-nets near this place. A few birds, rarely more than four or five in number, become meshed in the nets during the night, and are brought ashore in the morning. The water in which they are captured does not exceed twelve feet in depth.

Black-throated Diver, vol. iii. p. 201.

Mr. Watters writes to me that on the 8th of October, 1850, he obtained an immature bird shot between Howth and Kingstown. He describes it as "larger in size than the red-throated diver, and in nearly similar plumage, except that the throat and neck are closely mottled with black, and the feathers, when raised, are deep black underneath."

Gannet, vol. iii. p. 264.

I am much gratified to be enabled to add the following statement to that of Mr. Townsend at the page referred to. The Stags of Broadhaven being mentioned by Arthur Edwin Knox, Esq., in his very pleasing work 'Game Birds and Wildfowl, &c.,' just published, I wrote to that gentleman on the subject of the gannet's breeding there, and he replied (January 3, 1851), "It used, when I was a boy, to breed, but not in numbers, on the Stags of Broadhaven. I cannot say that I have seen their nests, but I have shot the young birds as well as the old ones on the wing, when passing through those islands in an open boat. The young ones were well able to fly, but apparently had only lately left the nest. I speak of many years ago." The writer has not had the opportunity of knowing anything of the gannets there for a long period.

Little Auk, vol. iii. p. 218.

December 10, 1848. At this date Mr. R. J. Montgomery wrote to

me that he "received a fresh specimen of the little auk the other day from the county of Limerick, where it was killed on an inland lake." An adult male, which I saw in a recent state, and which was in admirable condition, was found dead in the bay within three miles of Belfast, on the 25th of November, 1850; its stomach was empty. On the 20th of December, 1850, one was seen on Strangford Lough.

DECOYS FOR WILD-FOWL IN IRELAND.

When writing on the *Anatidæ* in the year 1850, I endeavoured to procure information on this subject, but with a very unsatisfactory result. There is sufficient, however, to show that decoys have been in a great degree out of use of late years, chiefly owing to the effects of drainage and general improvement of the country in lessening the number of wild-fowl visitants to the island.

1850. Meadows on the margin of Lough Beg, connected with Lough Neagh (on its eastern side), still bear the name of *'coy meadows*, from the circumstance that there was a decoy there at a very distant period. Lough Beg is still one of the finest haunts for wild-fowl in the north of Ireland; wild ducks and wigeon, in particular, are so numerous, and in such dense flocks, as, sometimes in calm weather when most conspicuous on the smooth surface of the water, to appear like floating islands.

At the Glyde Farm and Lisrenney (county Louth) it is said that many wild-fowl were, at one period, taken; the former has been long disused. At Beaulieu, in this county, there is an old decoy which has not been worked for a very long period. I am informed by Viscount Massareene, respecting two decoys in Louth—that the one erected by the late Baron Foster at Rathescar, is not in working order, and that about two miles distant from it, in the demesne of Oriel, are the remains of a very good one, in which, in his grandfather Lord Oriel's day, sixty brace of teal would sometimes be taken in a morning. It has not been used for upwards of forty years. The present Viscount has no intention of restoring this decoy, as it is in one of his best game covers.

At Mountainstown (county Meath), there was a decoy for teal, where a sporting friend has seen numbers taken, but in 1845, the proprietor, being written to, stated that it had not been worked for many years,

adding, that "the country had been so drained and improved, that all kinds of wild-fowl are now very scarce." I have merely heard of several others in this county, among others, of that at Lismullan, which has ceased to be worked for the last few years. In Westmeath and Kildare there are said to be decoys. In Wicklow there is one on a small river between Anamoe and the Seven Churches of Glendalough, but little attention is now paid to it. In the county Galway there was an extensive decoy at Clonfert, but it was given up about thirty years ago. At Eyrecourt, in the same county, one for teal is still worked annually, from November until the beginning of March. The birds leave the decoy every evening—it is supposed for the Shannon—and return at the approach of day. From forty to fifty teal, on an average, are taken in a day here when the wind is favourable.

There is a decoy at Kilcooley Abbey, county Tipperary, and one at Desart, county Kilkenny, the property of the Earl of Desart. From Thomas Fortescue, Esq., of Ravensdale Park, county Louth (who, when staying in the county Kilkenny, in December 1850, most kindly visited the latter to obtain the information for me), I learn that about thirty years ago 700 couple of wild-fowl was not an unusual number to take in a season. Since that period the quantity obtained has been diminishing, it is supposed, owing to the drainage of land; in 1849, the take amounted to 350 couple. Ducks are the most numerous; next teal; then wigeon. Pintail and other of the rarer ducks are occasionally procured; a pintail was on the water during Mr. Fortescue's visit (December 11), but did not enter the pipe.

Good information has been supplied to me by R. Longfield, Esq. (through the kind attention of John E. Herrick, Esq.), respecting his decoy at Longueville, county Cork. In the season from November till March 1840–41, 216 teal, 100 wild ducks, and 1 wigeon were captured; the greatest number taken on any one occasion being 35 teal and 6 ducks. In the same months of the following season, only 150 teal and 32 ducks were obtained. The greatest quantity taken for some years past was in the season of 1845–46, when about 730 head of ducks, teal, and wigeon were procured. More than the half of this number were teal; about 300, ducks; "some wigeon; about 25 golden crested wigeon [adult male wigeon], and 4 spoon-billed wigeon [shovellers?]." Seventy ducks and teal have been caught at one time. Before bad weather large numbers of these birds come to the water. My informant

adds, that in the season of 1849–50 he was not at Longueville, and no wild-fowl were taken, but he understood that the numbers on the decoy were greater than had been seen for some years;—the winter was unusually severe.

March 23, 1850. I visited (accompanied by Mr. J. R. Garrett) a decoy constructed four years previously in the demesne at Caledon (the seat of the Earl of Caledon in the county of Tyrone). This is a decoy of the first class, and was made under the superintendence of Mr. Skelton, sen., who came from Lincolnshire for the purpose. It is one of the best and most extensive extant, as to the number of pipes, there being eight of them; the largest in England has ten. There is much more water to some of them there, but 2 English acres, 2 roods, and 23 perches were considered quite sufficient in extent; the water is from two to three feet in depth. This decoy having only been worked for three seasons, no idea can yet be formed of its value, but I was much pleased to hear from Mr. Skelton, jun., who has the management of it, that there are as many wild-fowl in the demesne at Caledon as he ever saw in connexion with any one decoy in Lincolnshire, or other part of England. Not more than about a thousand birds have yet been taken in it any season, though many more might have been, but it was considered unwise for the first few years, or until the wild-fowl had made a regular haunt of the place, to capture many. The greatest number of birds taken on one day was 140, viz., 76 ducks, 54 wigeon, and 10 teal;—all obtained in three of the pipes. In addition to these three species, which are the staple of the decoy, there are taken, occasionally, shovellers (commonly called "spoon-bills"), of which about ten or twelve couple were here during the present season, and the half of which still remain (23rd of March); they were first caught in November, in the winters of 1848 and 1849—pochards (called "pokers")—tufted ducks (called "white-sided divers")—three or four couple of pintails are taken during a season—one scaup (a female) was obtained in the last three winters. The golden-eye duck is not known to Mr. Skelton; nor has he seen the shell-duck here, but it has been captured in the Lincolnshire decoys near the sea.

In Caledon demesne he considers that about a hundred pair of wild ducks breed, and at least twenty pair of teal. Frequently during the summer of 1849 he saw an old pair of wigeon, and very early in the

autumn remarked them to be accompanied by three others, which it was believed might be their young, though when first seen there was little apparent difference in size between them and the old birds.* In reference to the shyness of wild ducks, even where they never had an opportunity of learning it from their parents, the decoy-keeper at Caledon informed us that young birds, which were hatched by artificial heat, in an "incubator," within the demesne, were, at the moment they left the shell, as shy as they could have been under the tuition of their natural instructors, although the young of domestic fowls brought out in the same manner showed no fear of man. The young wild ducks became more familiar by degrees, but they still retained so much of their instinctive caution, that on hearing any sudden noise, such as that produced by the stamping of the foot, they instantly endeavoured to conceal themselves.

Mr. Skelton's method of taking wild-fowl in the decoy at Caledon is precisely that described in Yarrell's work. He mentioned some singular instances of the extreme sensitiveness of the olfactory nerves in wild-fowl. It is essential for him when about the decoy to prevent his presence being known, by breathing upon a turf, which is kept slowly burning. This we should imagine the birds must smell, though they may not apprehend any danger from it. A gentleman accompanying him on one occasion let a spark fall from the turf on his shooting-jacket, and the smell of the little portion of the coat that was burnt alarmed the birds so much that none were taken. A small piece of burnt leather thrown into a decoy pond will prevent the capture of a bird that day. The smell of milk boiling over on the fire in a farm-house, perhaps six hundred yards from the decoy at Caledon, and the wind blowing from the direction of the house to the water, prevents a bird being taken the same day. It is of so much consequence to avoid anything of this kind, that Mr. Skelton, sen., who rents a farm of a thousand acres in connexion with his decoy at Lincolnshire, and has about twenty-five people to provide for under his roof, forbids any cooking to be done in the house—sometimes for a few days—when the wind blows from it on the decoy, perhaps, as in the other instance, six hundred yards distant. If the smell of the burnt leather, milk, &c., be very strong, it will cause the birds to be unsettled for a long time, and particularly at the side of the pond where it is strongest.

* About the 1st of June, 1850, there was a pair of wigeon in the decoy.

For days not a bird will be seen in that quarter, either on the water or the landings.

A very simple mode of decoying was successfully practised by a medical gentleman of my acquaintance in the island of South Uist, one of the Hebrides. When in pursuit of wild ducks, he would take a tame duck out to the lakes, with a long string tied to one of its legs. By pulling this string, when desirable, he would make it *quack*, and thus attract others around it. In this way he frequently obtained several at a shot; on one occasion the tame duck fell a victim at the same time with five or six wild ones. The tame ducks here are very much crossed with the wild birds, and consequently resemble them in plumage.

The preceding is even more simple than the following manner of decoying Canada geese in the United States, as narrated by Sir Charles Lyell. "On our way back from Plymouth to Boston, we passed near the village of East Weymouth, by a decoy pond, where eight wild geese, called Canada geese, had been shot since the morning. Swimming in the middle of a sheet of water, was a tame goose, having one leg tied by a string to a small leaden weight, and near it were a row of wooden imitations of geese, the sight of which, and the cries of the tame goose, attract the wild birds. As soon as they fly down they are shot," &c.*

Part of the water in St. James's Park, London, was used as a decoy-pond in the reign of Charles II. In Cunningham's 'Handbook of London,'† various items of the expenses connected with the construction of a decoy here are copied from an account signed by the "merry monarch" himself. Judging from these, it should have been a very respectable one as to extent.

NOTES ON HYBRID BIRDS BRED IN A DOMESTIC OR SEMI-DOMESTIC STATE.‡

Hybrids, similar to those which have come under my own notice in Ireland, and that of friends who communicated the instances to

* Sir C. Lyell's 'Second Visit to the United States of North America,' vol. i. p. 120, 1st edit.

† Vol. ii. p. 434, 1st edit., as quoted in 'Quart. Rev.' for March 1850, p. 470.

‡ Hybrids bred in a wild state will be found noticed in vol. i. p. 309, and vol. ii. p. 40; in the former between the carrion and grey crow, and in the latter between

me, are so generally known to have occurred in other countries, that I hesitate to introduce any matter on the subject;—some readers, however, may wish for it.

Insessores.—At Fort William, near Belfast, hybrids have often been produced between the *canary-finch* (*Fringilla canaria*), and *goldfinch* (*F. carduelis*); such produce is very common. These hybrids never bred there, either among themselves or with birds of any species, though opportunities for their doing so were afforded. A female bird of this kind has been mentioned to me as having had young to a male canary-finch at Armagh.

A brood between the canary-finch and green linnet (*Fringilla chloris*) was produced at Fort William, and one also between the canary-finch and grey linnet (*F. cannabina*).

Mr. R. K. Sinclaire possessed a hybrid, bred between the last two species; it was an excellent song-bird, having chiefly the notes of the grey linnet.

A most singularly and beautifully marked hybrid, bred between the canary-finch and goldfinch, was shown to me in October 1845, by Thomas Sinclaire, Esq. This bird, which was of the ordinary colour of hybrids so produced, previous to the last moult, may be described as—Having the head quite black, with a broad collar of pure white round the entire neck; the throat is pure white, and joins the collar; the plumage of the back exhibits a mixture of brown and black, resembling more, perhaps, that of the hedge accentor, than any other of our native birds, but the deep shades are darker and blacker than in that species. The upper portion of the wings, viewed at rest upon the body, present a mixture of dark brown and black; the quills are all pure black, except a quill in one wing, of a golden yellow colour. The tail, excepting one whitish feather, is all black.

the black grouse and pheasant. Another instance was made known to me in April 1850, by Mr. Robert M. Austin, an eye-witness of the fact. At Waterloo cottage, within a mile of Ayr, where this young gentleman resided, a female common thrush (*T. Musicus*) and male blackbird (*T. merula*) paired in the summer of 1849, built a nest in a small shrub, and produced three young in June, which were parti-coloured, having some black spots, the size of a sixpence, on their breasts. The notes of one of these young birds were frequently heard, and differed from those both of blackbird and thrush, in being more detached. Both parents are stated to have fed and tended the young. My attention was first called to this interesting circumstance by the Rev. Wm. M'Ilwaine, of Belfast, who happened to pay a visit to the place at the time.

This bird, though said to be a female, sings a little: being kept in the kitchen, its song is always prompted by the music of the frying-pan, and so long as this is heard so is the song of the bird as an accompaniment. It lives on hemp-seed, refusing canary-seed altogether, and is a further illustration (see Sky-lark) of the former seed tending to melanism. Bull-finches kept by the owner of this bird lost their beautiful pink breasts by feeding on hemp-seed. The hybrid died in the plumage just described, and was presented to the Belfast Museum.

Rasores.—Hybrids between the male silver pheasant (*Phasianus nycthemerus*) and female common pheasant (*P. colchicus*) have been produced at Seaforde, county Down; and between the male common pheasant and domestic bantam fowl (*Gallus domesticus*), kept by R. K. Sinclaire, Esq., at Belfast. Although this hen laid many eggs, one only was productive; the hybrid resembled more its female than its male parent.

Natatores. Anatidæ.—Black Swan (*Cygnus atrata*, Lath.), male; *Mute Swan* (*Cygnus olor*), female.—In the proceedings of the Zoological Society of London for 1847 (p. 97), the following appeared.—"Account of a black and white mottled swan on the water in the demesne of the Earl of Shannon, Castle Martyr, county Cork; by Maurice Glencon, gamekeeper.

"In the year 1843, a male black swan paired with a white female swan; she laid six eggs, and hatched four cygnets. Before they got to the age of six months, three of them met with untimely deaths. This bird [the remaining cygnet?], in 1845, paired with its father, and laid four eggs, which came to nothing. It is very like the father about the head, but about the body it resembles the white swan. It lives on the water with others, black swans and white swans, and agrees with both.

"The above statement may be relied on as authentic and correct, because I have witnessed it from beginning to ending." Castle Martyr, June 1847.

The pairing of a male black swan with a Bewick's swan, but from which no young resulted, has been noticed at p. 21.

Mute Swan (*Cygnus olor*), and *Polish Swan* (*C. immutabilis*).—Mr. Yarrell mentions that a Polish swan has paired with a mute swan on the waters in the gardens of the Zoological Society, Phœnix Park, Dublin (vol. iii. p. 227, 2nd edit.). Mr. R. Ball informs me that the

case referred to was as follows.—"A female hybrid Polish swan (bred between this species and the mute swan) paired with a mute swan at the garden, Phœnix Park, and during two seasons had eggs, on which she sat, but no young were produced. She may have been robbed of the eggs before the proper time for incubation, as the nest was found empty;"—it is not stated whether in one or both seasons.

Two adult hybrids between the mute and Polish swan, of which the bird just noticed was one, came under my observation in March 1847, in the garden already mentioned. The bill and fleshy excrescence at its upper base were perfectly similar in colour to the same parts in the mute swan, from which the birds, on the whole, differed only in being smaller, and having the legs and feet of a dirty greenish flesh-colour, instead of black.

Canada Goose (*A. Canadensis*), male, and *Common Tame Goose* (*A. ferus*). *Islay House* (island of Islay), Scotland, January 20, 1849.—A male of the former, bred with a tame goose here, and I saw the well-marked progeny nearly as large as the male parent, with similar markings, but in much fainter and less decided colours; the mark on the cheek, instead of white, being "whitey-brown," &c.

Canada Goose and *Bernacle* (*A. bernicla*). *Islay House*, January 20, 1849.—I saw a couple of very handsome and peculiar-looking birds here to day, which were sent from the collection at Knowsley, the Earl of Derby's; and were said to have been produced between these species. Their parentage being partially from the Canada goose, was at once evident, as they had its cheek mark, but of a "whitey-brown" hue:—they were pure white round the base of the bill. Plumage of the body generally resembled that of the Canada goose. Their legs were reddish-yellow, and one bird had them much lighter in colour than the other. The bills were very small and bernacle-like.

Sandwich Island Goose (*Bernicla Sandvicensis*, Vigors), male, and *Tame Goose*. *Islay House*, January 20, 1849.—Sandwich Island geese, of which I saw a pair, were brought here some years ago. The gander deserted his proper partner and "took up" with a common tame goose, in the neighbouring village of Bridgend. Two young were produced the first year and seven the second. The goose was unfortunately killed before the third year. The place chosen for the nest was on the ground, in the churchyard, beneath the shelter of a grave-stone which inclined much from the perpendicular. Here the

gander most assiduously attended to and defended his partner, flying at any one that approached her, and buffeting him with all his strength.

Tame Goose, male, and *Canada Goose*, female, produced a brood of three young at the Falls (Mr. Sinclaire's country-place), near Belfast. These hybrids were coarse, ugly-looking birds, and their carriage that of the *tame* goose, without any indication of the fine bold bearing of the *A. Canadensis*, which, in colour, they resembled more than their other parent. Their neck and head were of a pale "clove-brown," where those of *A. Canadensis* are black, and a mere lighter shade of this colour on the sides of the head, took the place of the pure white mark in this species.

Swan Goose (*Anser cygnoides*), male, and *Tame Goose*, female, successively for some years produced broods at Wolfhill, near Belfast. The general appearance of these hybrids at once denoted their origin, partaking, as it obviously did, of the characters of both parents.

Bean Goose (*Anser segetum*), male, *Canada Goose*, female.—According to Mr. R. Ball, two hybrids, presumed from their appearance to have been so produced, were bred in the Zoological Gardens, Phœnix Park, Dublin, in 1843. They are very handsome birds, and apparently heavier than either parent; in plumage liker the female than the male:—of late (December 1850), they have become lighter-coloured in the neck than formerly. The hybrids go about as if under sexual influence, but do not take up with other species. The female parent paired two or three times with the swan goose (*A. cygnoides*), but there has been no produce.

Spur-winged Goose (*A. Gambensis*), male, and *Egyptian Goose* (*A. Ægyptiacus*), female, have bred in the gardens of the Zoological Society, Phœnix Park, Dublin, as already mentioned by Yarrell.

Shelldrake (*A. vulpanser*), male, and *Common Tame Duck* (*A. boschas*), female.—A shelldrake, at the Falls, bred two or three seasons successively with a tame duck, in colour like a wild one, and it is believed (though not now positively remembered) with the same individual each season. Several young—very handsome birds—were produced in each instance. Neither males nor females had a white feather in their plumage, but were of a uniform brownish colour, with a bronzed metallic lustre; the males deeper in tint than the females. They had a fine erect carriage like the shelldrake. A pair of these hybrids, male and female, were given to John Templeton, Esq., of Cranmore, near

Belfast, the distinguished naturalist, who assured Mr. Wm. Sinclaire that the male bird bred with one of his tame ducks, adding, that the progeny at once marked their descent.

Muscovy Duck (*Anas moschata*), male, and *Tame Duck*, female, have often at the Falls produced hybrids, which were considered excellent for the table. A gentleman, long resident in Virginia, informs us that such hybrids are bred to a considerable extent there, and in other of the United States, for food.

Pintail (*A. acuta*), male, and *Wild Duck*, female.—Mr. R. Ball remarks that "a hybrid, produced between the male pintail and wild duck, in the gardens of the Royal Zoological Society of Ireland, is a bird of much beauty. It is in its third or fourth year (1846), and is rather wild, seldom coming near to any person. This bird occasionally disappears for months at a time, but where, or how it goes, is not known, as it has never been seen to fly."

Wild Duck (*A. boschas*), male, and *Pintail*, female.—Birds have been so bred in the Zoological Gardens, Phœnix Park, Dublin. A male of these hybrids has annually paired with a wild duck, but no produce has been known. This hybrid flies much about, and while hundreds of other ducks have been shot by persons in the neighbourhood, he has hitherto, for a number of years, escaped (December 1850).

Mr. Yarrell, in his 'British Birds,' has noticed a number of hybrid *Anatidæ* under the respective species, and Mr. Bartlett has given, in the 'Annals of Nat. Hist.' (vol. xix. p. 424), a list of those known to have been produced; but the fullest information I have seen, is contained in a memoir by Baron De Selys-Longchamps, specially on the subject, towards which some of the preceding matter was contributed by Mr. Ball and myself. There is no date of publication to the copy of this memoir sent to me by the author, but it appeared subsequent to the autumn of 1845, when the Baron visited Ireland. It is marked as published in vol. xii. (No. 10) of the "Bulletins" of the Royal Academy of Brussels.

With respect to the most important point connected with hybrids, —viz., how far they are prolific among themselves, or in connexion with genuine species,—I am in possession of very little original information. This is an important subject in reference to the permanence of species, and one to which sufficient attention has not hitherto been properly directed. Contributions towards it, that I remember to

have come under my notice of late years, are by Mr. Blyth, in Charlesworth's Mag. Nat. Hist. for 1837, p. 81, and Mr. Eyton, in the same volume, p. 358; the former introduces the subject in a paper on "Psychological Distinctions between Man and other Animals," and the latter in one bearing the title of "Remarks on the Theory of Hybridity." Mr. Westwood, in 'Trans. Entom. Soc.' vol. iii. p. 196, has a paper entitled "Description of a Hybrid Smerinthus, with remarks on Hybridism in general." Dr. S. Morton, in the American Journal of Science for 1847, published a memoir on the general subject, entitled "Hybridity of Animals considered in reference to the question of the Unity of the Human Species."

A FEW NOTES ON THE MOULTING OF FEATHERS IN SPRING.

So little attention has been bestowed on this subject, that I copy a few casual notes. Adult birds of the *Larus marinus*, *L. argentatus*, and *L. canus*, having the head and neck speckled all over with blackish feathers in winter, though of the purest white in summer, suggested the question how this change was effected, and on examination of those parts of the bird, at the vernal season in various years, new, or pen-feathers were found springing, as in autumn, preparatory to the general moult. There was, however, a general thinness or deficiency of plumage on the heads and necks of these species, until the pen-feathers were matured, so much so, that the chief taxidermist in Belfast considered birds killed from the end of February until the full summer plumage was attained, unfit to be set up. In like manner, these pen-feathers were found in that portion of the head of the *Larus ridibundus* which is white in winter and black in summer.

Larus argentatus. March 14, 1848.—Of two adult birds shot today in company, and which probably had paired, the smaller one (proved by dissection a male) has the head and neck wholly white;—on examination, a great many white feathers, in a young state, appear. The larger bird (*female*) exhibits more than one-third of the brownish-grey winter feathers on the head and neck. New white feathers appear plentifully in pens on those parts, and a very few are apparent at the anterior part of the back and belly. The ova, in this individual, did not exceed one-third the size of an ordinary pea.

February, 1849. Adult bird examined early in the month, had the

grey winter feathers of head and neck falling off, and new white ones appearing. In a bird shot so early as the 12th of this month, in 1846, the neck was pure white.

March 10, 1849. Adult shot to-day, exhibited pure white plumage on head and neck, and other new white feathers were in pens.

Larus ridibundus. March 16, 1848.—Two of these birds, shot to-day, were brought to me to prove that the white feathers of the head fall off in spring, and are replaced by wholly new black feathers. One bird was perfectly adult, and did show this; the black feathers being so far advanced *beneath* the white ones, that when these latter drop off, the head is perfectly clothed in black, which accounts for the sudden transition that takes place. There are many pen feathers throughout the entire neck of this bird, as in that of the herring-gulls examined a few days ago—a circumstance which I note in consequence of the change of colour being confined to the head in the one species, and prevailing throughout the neck in the other.

April 16, 1850. An adult bird of this species obtained by Dr. J. D. Marshall, last October, retained (as he informs me) its winter plumage on the head (pure white, with the black ear-spot) until the 6th of April, when it commenced getting black, and on this day had a perfect black head, having been just ten days in acquiring the change.

July 14, 1850. I examined Dr. J. D. Marshall's living bird, already noticed, and a finer *masked gull* (*L. capistratus*), as to *form* of mask and its pale broccoli-brown *colour*, could not possibly be.

Larus canus. March 7, 1849.—An immature bird, having a few feathers only of adult plumage on the back, has the entire feathers of the throat new.

Larus rissa. February 1849 (end of).—Grey winter feathers of head and neck dropping off in an adult bird, and new white feathers appearing.

Alca torda. February 25, 1848.—An adult razorbill, killed at Strangford Lough on the 22nd, was brought to me in the flesh, that I might see the state of plumage of its neck and head. *Forehead and top of head* (which are black in summer and winter) exhibit both old and new black feathers. Feathers on sides and back of neck either white or black, the white falling out, and young black rising to supply their place: the black are sufficiently grown to completely clothe the bird before the white ones fall out. There is no moult going on in

any part of this bird, but in the head and neck, where the change takes place in colour between the summer and winter plumage. This change is continued far down the hinder part of the neck to near the back. A specimen shot with this, is said to have been in summer plumage.

Motacilla Yarrelli. February 1849 (middle of).—White feathers of throat falling off, and young black ones appearing. All the dark body plumage of the bird had become darker than in winter, without a change of feathers.

Vanellus cristatus. February, 1849 (end of).—White feathers of throat falling out and new black ones appearing.

Phalacrocorax carbo. March 3, 1849.—One of these birds, in the plumage of Bewick's crested corvorant, shot in Belfast Bay to-day, came under my notice; it had white patches on thighs, white bristly feathers on neck, plumage white, from near the eye downwards round the base of the bill; but it was not in the very fullest state of this plumage: there was an elongated crest of greenish-black feathers on the back of the head, even more fully shown than in Yarrell's figure (vol. iii. p. 480, 2nd edit.). This bird was a female, and contained many minute eggs, about sixty altogether; the largest the size of a small pea, and others varying almost to that of clover-seed. The whole bird was in a state of moult, except the quill and tail-feathers; two of the latter, however, being so. All the dark-coloured plumage was of a deeper tint than in winter. The belly had lost its winter white, and was now black.

Motacilla boarula. March 10, 1842.—One shot to-day had the parts of the plumage, and those only that are of a different colour in the breeding season, in moult. A few of the old feathers remained on the throat changed to black, but these it was believed would drop off, and give place to new ones.

Charadrius pluvialis. March 10, 1849.—A bird shot to-day was in spring plumage, as described by Yarrell ('Brit. Birds,' vol. ii. p. 386, 1st edit.). Old feathers appear with black, white, and golden markings, as do new also; some with white and others with black shafts bear these three markings. The shaft and lower portion of the feather is sometimes white where the plumage is black at tip,* and black

* This is also the case in one shot on April 27th, and in a grey plover, in adult summer plumage, preserved in the Belfast Museum. Mr. J. R. Garrett has remarked it also in the spring moult of the lapwing and pied wagtail.

at either side towards the base, but the shaft is more frequently black than white in feathers displaying any of the former colour.

The notes here given, and more particularly those on *Larus ridibundus*, are opposed to Mr. Yarrell's view. The difference, however, is not positive, but in degree only, excepting in the case of the species last named, which that gentleman, in the one instance detailed by him, describes as attaining the black head of summer without the addition of a new feather. Certainly in the preceding instances the change of plumage in those parts varying in summer and winter was chiefly owing to new feathers, in some of them wholly so.

AGE OF BIRDS.

This chapter is introduced to record the age attained by a redbreast and cockatoo. The other instances are noticed simply as positive facts, coming under the observation of persons whose correctness can be relied on, without any reference to their being of unusual occurrence.

To the Rev. J. Scott Porter I am indebted for the following communication.

"Belfast, March 3rd, 1845.

"My dear Sir,

"I sit down, at your request, to put in a written form a circumstance which I lately mentioned to you in conversation, tending to show that some of the small birds may attain a much greater age than has commonly been suspected.

"At Hill-head, near Ballymena, I repeatedly saw a very decent-looking man, who lives in Ballymena, but who has some land near the entrance to Mr. Gihon's grounds, feeding a robin-redbreast, which was so tame and familiar that he came whenever he was whistled for, and ate his food from the extended hand of his friend; even though a stranger, as I was, might be present within a few yards.

"This is remarkable, but not wonderful: for the robin is well known to be a courageous bird, easily tamed, and capable of attachment; but on entering into conversation, Mr. Logan surprised me not a little by stating that this identical bird has lived in these habits of intimacy with himself, for upwards of thirty years.

"He said it was in the year 1812 or 1813, that their familiarity commenced. He was employed in levelling an old ditch, when the

bird attracted his notice by its eagerness in searching for food among the fresh-stirred earth : it often came very close to the spade, in search of a small white worm, of which it appeared to be particularly fond. Mr. Logan, acting upon this hint, gathered all of these that he could find, and hid them from the bird under a piece of slate ; when he had collected a considerable number, he prevailed on the robin, by the tempting display of them, to come and pick them, first from the blade of the spade, and afterwards from his hand. This was the beginning of their friendship, which had continued, without interruption, till the time of my visit, and probably continues still. Mr. Logan had never been absent from home for more than a few days at a time during the interval, and had seldom failed to feed him from his hand at least once a day while at home.

"It occurred to me that there might have been a number of birds, one of which had succeeded the other in this intercourse; but on putting a series of questions to find whether there were any grounds for this supposition, I could discover none, for Mr. Logan had never had two pet robins at the same time; he had never noticed two birds contending for his favours; he had never observed one bird watching eagerly in the hedges while another was feeding upon his hand; nor had he ever found his daily visitant more shy at any one time than he had been formerly. Throughout the whole period of thirty-two years, or upwards, during which the intimacy had subsisted, the bird had always promptly obeyed his signal. He had, therefore, not the slightest doubt upon his mind that the same identical redbreast had been his familiar during the whole time; and he thinks it quite impossible that he could be mistaken upon the point.

"I have only to add that Mr. and Mrs. Gihon, and also Dr. Patrick of Ballymena, assured me, from their knowledge of the man's character, that he is incapable of knowingly attempting to deceive. He is a very respectable person in his rank of life. They have long known him, and they all concur in this statement. They have also been aware of his familiarity with the bird for several years past, and have seen occasional instances of it, though none of them could, of course, pretend to verify the bird's *personal identity*, or to state how long the intimacy had subsisted.

"Believe me, dear Sir, very truly yours,

"J. Scott Porter.

"P.S.—I sent this letter down to Ballymena. Mr. and Mrs. Gihon and Dr. Patrick assure me that the character given of Mr. Logan is perfectly correct; the letter was read to him, and he adheres, in every particular, to his former statement. He does not agree with me, however, in considering the robin to be easily tamed. The person who keeps Mr. Gihon's gate (also a respectable person in her line of life) has observed the bird for nine years (ever since she came into her present post), and has no doubt of its identity for that length of time."

I regard this information on the age of the robin as very interesting, from the circumstance that it is almost impossible to ascertain the age attained by birds in a state of nature.

A blackbird, noticed in Vol. I., was kept alive in a cage for twenty or twenty-one years, and a caged goldfinch lived with a friend of mine for seventeen years; its age when first obtained being unknown. It is common for the canary-finch to live at least twelve years in confinement, and a piping bullfinch, as mentioned at Vol. I. p. 265, was in the possession of a friend for about twenty years, when I made a note of the circumstance; how much longer it lived I do not know, nor am I aware of its age when he obtained it. In Vol. II., a silver pheasant is mentioned as living in captivity for twenty-one or twenty-two years; and in Vol. III., a pintail duck thirteen years on a pond, where it was at last wantonly killed.

At an agricultural exhibition in Dungannon, a goose was exhibited a few years ago, on account of the honourable age it had attained. It has since died, aged forty-five years.

A "common green parrot," brought to the north of Ireland about the time of the battle of Waterloo—1815—died in the winter of 1848, having been at least thirty-three years old;—its age when procured was not known.

An old lady left by will to Charles Telfair, Esq., a gentleman honourably known in connexion with the Mauritius, a large sulphur-crested cockatoo (*Cacatua galerita*), after having it, as believed, about twenty-five years. It was a great pet with this gentleman for thirty-eight years, until his decease, after which it was brought by his niece to Belfast, and has now been here for nearly eighteen years. I went to see the bird in March 1846, when it was in the highest health, and I was told that for the fifty-one years at least, during which it had been in the possession of Mr. Telfair and its present owner, the cockatoo

had been daily brought to dine with the family, and had partaken of their fare. It ate potatoes and flesh-meat, or potatoes and butter, taking twice the quantity of the latter that it did of the vegetable. The report I had of this bird in December 1850 was, that the sight of one eye is gone, and a cataract spreading over the other, and that it has a cough, accompanied by the ejection of phlegm. With such unpleasant symptoms of old age, it is to be feared that we cannot reckon on its life being much longer extended.*

Notice of migratory Birds which alighted on, or were seen from, H.M.S. Beacon, Captain Graves, on the passage from Malta to the Morea, at the end of April 1841. [I published this paper in the eighth volume of the 'Annals of Natural History' (1842).]

"Having been favoured by my friend Captain Graves, R.N., with an invitation to accompany him during the projected government survey of the island of Candia, I, with Mr. E. Forbes (who had received from the Admiralty the honorary appointment of Naturalist on the occasion), left Malta in H.M.S. Beacon, on the 21st of April. The first port we sailed for was Navarino, for the purpose of watering the ship. The passage occupied seven days. It being just the period of the year when many species of birds which make Europe their abode only in the more genial seasons, after having passed the winter in Africa, were crossing the Mediterranean to their summer quarters, we were often gratified by a sight of them, either passing, resting briefly on the rigging, or remaining sometimes so long as a day or more about the ship.

"The following notes were made upon the subject. The prevailing wind of the day is set down: the progress noted is what we had made at sunset.

"*April* 22.—Wind W., forty miles E. of Malta. An owl alighted on the vessel and remained a short time. I saw it very well and near, but could not be certain of its species. Looking over the collection

* In the *Belfast News-letter*, October 28th, 1812, there is mention of a green parrot shot at Byrt, which proved, from a gold ring on its neck, to have belonged to Captain Packenham, of the *Saldanha* ship of war, lost with all her crew off Lough Swilly. The loss of the ship was on the 4th of December of the preceding year; so the bird had probably existed at large, on its own resources, for ten months, including a winter.

at the British Museum and referring to Gould's 'Birds of Europe' since my return, have not satisfied me on the point. Other examples of the same species were seen on the passage, and afterwards in the island of Paros. It seems to be the most common of the small migratory owls to the south of Europe, and I have little doubt is the species noticed by Sibthorp in his papers on Greece (published in Walpole's Memoirs) as the *Strix passerina*.—Blue-headed wagtail (*Motacilla neglecta*, Gould): two of these birds, both females, were about the vessel all day, and very tame; one of them flew into our cabin. It was amusing to see them fly-catching on the deck, where they appeared to great advantage, and met with considerable success. Their manner is, poking out the neck most ludicrously, opening wide the bill, and then—making the unerring dart at their victim.*

"Common swallow (*Hirundo rustica*). Two remained some time about the ship, perching on the rigging, and hawking over the deck in pursuit of flies.

"*April* 23.—Wind S.E., 80 miles from Malta and 50 from Cape Passaro, the nearest land. A lesser grey shrike (*Lanius minor*), of which I had a near view several times; a whitethroat (*Sylvia cinerea*), a willow-wren (*Sylvia Trochilus*), and a black-headed bunting† (*Emberiza melanocephala*), flew on board. Two individuals of the *Motacilla neglecta* remained for some time in the vessel, as did a wheatear (*Saxicola Œnanthe*) all day. A house marten (*Hirundo urbica*) flew into the cabin and was found dead shortly afterwards: it had not met with any molestation on board. The officers of the Beacon have frequently known birds of different species, when crossing the Mediterranean, thus fly into the cabin, secrete themselves, and die. A quail (*Perdix Coturnix*) was captured on board, and appeared to be dying at the time.

"*April* 24.—Wind S.E., 90 miles E. of Sicily: Syracuse the nearest land. Several of the *Motacilla neglecta* flew on board; one of them entered the cabin very boldly, and entertained us much by its familiarity. Persons passing in and out of the room did not frighten it from fly-catching, in which it succeeded by running, leaping, or taking

"* When, on the 16th of April, on our passage from Marseilles to Malta, and about twenty miles southward of the most southern point of Italy, two of the *Motacilla neglectâ*, both males, flew on board the steam-packet; they were very tame, and remained in the vessel for half an hour.

"† A continental species, and not the bird *Emberiza Schæniclus*—known in some parts of the British Islands by this name.

short flights at its prey: this bird even alighted on our shoulders, and picked flies off our clothes.

"Two or three hoopoes (*Upupa Epops*) came on board, rested for a short time, and proceeded on their flight; a turtle dove (*Columba Turtur*) did the same.

"A flock consisting of twelve ibises (*Ibis falcinellus*, Temm.) seen first at a distance coming from the south-west, flew close past the vessel, and continued directly in the same course, or towards the north-east, until lost to view.

"*April* 25.—Wind N.E., 58 miles from Calabria, the nearest land: 135 miles from Mount Etna at sunset, when it was visible. A scops-eared owl (*Strix Scops*) was knocked down and captured just as he had clutched a lesser whitethroat (*Sylvia Curruca*), of which species two or three individuals came on board. A shrike (*Lanius* ——), which from the height it generally kept at I could not see well enough to distinguish its species, seized a *Sylvia Trochilus*, all of which it ate except the bill: of the latter species, one taken by ourselves met with better treatment, and, perching quietly on the finger, was so carried about to feed on flies, which it seized when within reach, never leaving the hand if the fly could possibly be captured from it. A female golden oriole (*Oriolus Galbula*), a redstart (*Phœnicura ruticilla*), and a lark (*Alauda* ——), of what species I could not be certain, came on board—the redstart was caught. Several of the *Hirundo rustica* about the ship. A wryneck (*Yunx torquilla*) was captured, and on being taken within reach of flies, at once picked them up.* When turning about its neck in the manner peculiar to the species, this bird was compared by some of the officers to a particular species of snake found in Greece, which, like it, has a dark band on the head and neck.

"Two or three of the *Upupa Epops* and a *Columba Turtur* flew on board, but did not remain long. 'Large and small hawks' were reported to me as seen about the ship; but the goatsucker and cuckoo might, from their general appearance and mode of flight, be not improbably looked upon as 'small hawks.'

"*April* 26.—Wind N.E., 86 miles from Zante, the nearest land:

"* The birds which, in addition to the wryneck, fed freely on flies, when held in the hand within reach of them immediately after capture, were *Sylvia Trochilus*, *Motacilla neglecta*, *Hirundo rustica*, and *Hirundo urbica*.

130 miles from Navarino. A fine male woodchat (*Lanius rufus*), a white-collared flycatcher (*Muscicapa albicollis*), and one of Natterrer's warblers (*Sylvia Natterreri*) were caught on board.

"A *Sylvia Trochilus* and a chiff-chaff (*Sylvia rufa*) were found dead in my cabin; they had not been caught or injured in any way on board, and must, I think, have died from fatigue: want of food could hardly have caused their death, as there were plenty of flies in the cabin. A *Sylvia Curruca*, a sub-alpine warbler (*Curruca leucopogon*, Gould), a *Saxicola Œnanthe*, a whinchat (*Saxicola Rubetra*), a pied wheatear (*Saxicola leucomela*), and an *Alauda*, of the same species as noticed yesterday, flew on board, as did two or three individuals of *Motacilla neglecta*. Several of the *Hirundo rustica* were about the vessel during the day, and some remained, perching on one of the boats, throughout the night. Three bee-eaters (*Merops apiaster*) came from the south, and flew close past the ship without alighting. I saw four of the *Columba Turtur* come from the south to-day; two of them singly, the other two in company: one only alighted on the ship, and in the evening was caught when asleep.

"*April* 27.—Wind N., 45 miles from Zante, the nearest land, and in sight: 60 miles W. of the Morea. A kestrel (*Falco Tinnunculus*) flew close past the ship, and a 'much larger hawk,' which did not come under my own observation, was stated to have been seen.

"Two females of the *Oriolus Galbula* which flew on board were captured. Two or three males of the *Muscicapa albicollis* visited us to-day, and as many females either of this species or of the pied fly-catcher (*Muscicapa luctuosa*), but most probably of the former.

"A *Saxicola Rubetra* and a *Motacilla neglecta* came to the vessel. About a dozen of the *Hirundo rustica*, which rested last night on the rigging, went off this morning. Throughout the afternoon and towards evening many more arrived, and continued flying about the ship in considerable numbers.

"A few of the *Hirundo urbica* appeared this morning, and remained through the early part of the day, confining their flight to the lee-side of the ship: in the afternoon still more were seen hawking about in company with *Hir. rustica*; as flies were numerous, they probably obtained plenty of food: at four o'clock P.M. all of this species were gone.

"In the morning a *Merops apiaster*, coming from the south-west, alighted for a moment on the vessel, and then flew towards Zante, or

in a north-east direction: soon afterwards a flock, consisting of fifteen, came from the same quarter, hawked about the leeward side of the vessel for a short time, and then proceeded north-east: an hour after their departure (ten o'clock) a flock of eight appeared, and alighting on a rope astern the ship, remained there for nearly an hour; they were perched close together, and so low down on the rope, that by its motion the lowest one was more than once ducked in the water, but nevertheless did not let go its hold or change its position for a drier one. These birds were but a few yards from the cabin-windows, and looked so extremely beautiful, that they were compared by some of the spectators to paroquets, and on account of their gaudy plumage not very inaptly. After these left us, others were seen throughout the day, but generally single birds; they rarely alighted: all flew in the same course.*

"A few goatsuckers (*Caprimulgus Europæus*) appeared about the ship to-day, and alighted; they were all single except in one instance, when two were in company. A few individuals of this species were likewise seen within the last two or three days. A couple were shot this afternoon. Throughout to-day the *Columba Turtur* was observed coming from the south, and generally single; very few alighted.

"All the birds seen on migration bore right on in the course they had come, whether they rested temporarily on the vessel or otherwise. They all came from a southerly direction, either due south, S.W., or S.E. The wind was moderate, the weather fine and dry during the whole passage, so that all the species we saw were in the ordinary course of migration, and none driven to the ship by any stress of weather.

"Although not coming within the title of this communication, inasmuch as it had already taken up its summer quarters, I shall here mention the alpine swift (*Cypselus Melba*), which, upon our entering the fine bay of Navarino, on the morning of the 28th, appeared in great numbers careering high overhead. Of the *Hirundines* generally, it may be remarked, that from our arrival in France on the evening of the 1st of April, we did not see any of the species until the 9th,

"* When not very far to the westward of Cape Matapan, on the 1st of May, a flock of twenty-nine of the *Merops apiaster* flew close past the ship towards the Morea.

when going down the Rhone from Lyons to Avignon. About half-way between these places several of the *Cyp. melba* were seen flying over the river, and likewise at all suitable places, from where they first appeared, until we reached Avignon. *Hirundo rustica* and *H. urbica* were likewise seen several times between Lyons and Avignon, but were nowhere numerous. The first I saw of these species (but which of them could not be determined, from the distance) was a small flock flying northwards, evidently on migration. All, indeed, which were seen to-day were, I think, only temporarily here, and would, after having got sufficient rest and food, move northwards. A very few sand martins (*Hirundo riparia*) were also seen about the Rhone to-day. At Malta, on the 17th of April, we first met with the common swift (*Cypselus murarius*), where, together with the three species of *Hirundo* just mentioned, numbers were flying low and in company, wherever we walked about the island; the day was very fine and warm: all four species were about as numerous as in their most favoured haunts in the British Islands.

"On the 18th of April, when walking in the neighbourhood of Valetta (Malta), six little plovers (*Charadrius minor*) in a flock alighted very near us, apparently to rest, and after a short time proceeded in their course, which was in a north-west direction."

The birds seen on this occasion seem to me very interesting for more than one reason. Persons even of education still exist who are incredulous respecting the fact that many species which in summer frequent the British Islands, winter south of the Mediterranean, and cross that sea annually on their northern migration in the spring; but surely the fact of twenty-three of them having been seen crossing the Mediterranean during several successive days in spring, and all flying northward, should be a conclusive proof; in addition to which it may be stated that migratory species only were observed.* The twenty-three species alluded to are the

Kestrel†	*Falco tinnunculus.*
Passerine Owl	*Strix passerina.*
Scops-eared Owl	„ *scops.*

* Among them, too, were four of our smallest birds—*Sylvia trochilus*, *S. rufa*, *S. cinerea*, and *S. curruca*.

† The kestrel, though permanently resident to some extent in the British Islands, is a well-known bird of passage in the south of Europe.

Woodchat	*Lanius rufus.*
Pied Flycatcher?	*Muscicapa luctuosa?*
Golden Oriole	*Oriolus galbula.*
Redstart	*Phœnicura ruticilla.*
Whinchat	*Saxicola rubetra.*
Wheatear	,, *œnanthe.*
Whitethroat	*Sylvia cinerea.*
Lesser Whitethroat	,, *curruca.*
Willow Wren	,, *trochilus.*
Chiff-chaff	,, *rufa.*
Blue-headed Wagtail	*Motacilla neglecta.*
Wryneck	*Yunx torquilla.*
Bee-eater	*Merops apiaster.*
Hoopoe	*Upupa epops.*
Swallow	*Hirundo rustica.*
House Martin	,, *urbica.*
Goatsucker	*Caprimulgus Europæus.*
Turtle Dove	*Columba turtur.*
Quail	*Perdix coturnix.*
Ibis	*Ibis falcinellus.*

Besides the British species seen, were several others, all migratory in the south of Europe, viz.:—

Lanius minor.
Lanius —— *?*
Muscicapa albicollis.
Saxicola leucomela.
Curruca leucopogon.
Sylvia Naterreri.
Alauda —— *?*
Emberiza melanocephala.

It is interesting, also, to observe that some individuals of species, the great body of which must have passed some time before, still continued moving northward; — the wheatear and chiff-chaff, for instance, two of the earliest migrants northward in Europe. The great flight of quails had, likewise, passed some time before, as I had learned at Naples and Malta, when travelling southward to join the *Beacon*.

Illiterate people, both in England and Ireland, unable to understand the subject of migration, account for the disappearance of the cuckoo by imagining that it is "turned into a hawk" in winter; and some of all classes, knowing the slow and slovenly flight of the land-rail (*Rallus crex*), cannot believe that it has sufficient power of wing to migrate far. But in the spring it proceeds from Africa as far north as Sweden, Norway, and Iceland, and in the autumn returns again, to winter on that continent. In Provence, on the Mediterranean coast of France, and in Tuscany, it is as regular a bird of passage as in the British Islands. In Provence we learn that "they appear with the quails (but are far less numerous), and frequent the same places. As they are much larger, and always appear to conduct them, they have received the name of the *King of the quails*."* In Italy it bears that name also;—*Re di quaglie*.† My friend, Mr. W. R. Wilde, met with the species at Algiers, in December, and was told that it wintered there.‡

* Duval-Jouve, in 'Zoologist,' vol. iii. p. 1113.

† Savi, 'Ornitologia Toscana,' vol. ii. p. 375.

‡ A note, contributed by Charles Ensor, Esq., relates to the water-rail, a resident species in the British Islands, being taken at sea. He remarks in an accompanying letter:—"I have mentioned the course of the wind, north-east, and although that wind was off the land, it was so exceedingly light, that I do not think it could have blown the bird away from the land. It did not show any symptoms of exhaustion, but was quite lively when captured."

The note made on the occasion is as follows:—"Lat. 47° N.; long. 15° W.—At sunset this evening (August 3rd, 1836), a water-rail, *Rallus aquaticus*, flew on deck. As I was anxious to ascertain how long it could be kept alive on board, I got the carpenter to make a cage for it, and brought it into the cabin. We caught a tunny, *Scomber thynnus*, the day previously, and it soon began to eat small pieces of the fish; it also greedily devoured any flies which came into the cage. We had had light winds from the north-east for some days prior to the 3rd of August, and also afterwards, which delayed our arrival at Liverpool until the 11th of that month. On arriving abreast the lighthouse, at the entrance of the Mersey, I brought it on deck to let it fly away; it flew towards the lighthouse for about two hundred yards, and then returned to the ship. I landed that evening, and, on returning on board the following morning, was sorry to find that it had been eaten by a cat during the night."

ENGLISH

ALPHABETICAL INDEX

TO VOLS. I., II., & III.

Page.

Aberdevine ..... vol. i. 264
Accentor, alpine ..... i. 158, 241
—— hedge ..... i. 156
Auk, black-billed ..... iii. 235
—— great ..... iii. 238
—— little ..... iii. 218, 451
Avocet ..... ii. 220
Bee-eater ..... i. 367
Bernacle ..... iii. 46, 449
—— white-faced ..... iii. 46
Bittern ..... ii. 160
—— American ..... ii. 168
—— little ..... ii. 159
Blackbird ..... i. 142
—— mountain ..... i. 149
—— rock ..... i. 149
—— water ..... i. 116
Blackcap ..... i. 183
Black Game ..... ii. 34
Bluebonnet ..... i. 203
Brambling ..... i. 249
Bullfinch ..... i. 274
—— pine ..... i. 275
Bunting, black-headed ..... i. 245
—— briar ..... i. 241
—— cirl ..... i. 244
—— common ..... i. 241
—— corn ..... i. 241

Page.

Bunting, Lapland ..... vol. i. 241
—— mountain ..... i. 237
—— ortolan ..... i. 244
—— reed ..... i. 245
—— snow ..... i. 237
—— tawny ..... i. 237
—— yellow ..... i. 243
Bustard, great ..... ii. 77
—— little ..... ii. 77
Butcher-bird, ash-coloured .. i. 111
Buzzard ..... i. 72
—— honey ..... i. 77, iii. 435
—— moor ..... i. 78
—— rough-legged ..... i. 76
Capercaillie ..... ii. 31
Chaffinch ..... i. 246
Chatterer, waxen ..... i. 229
Chicken, Mother Cary's ... iii. 418
Chiff-chaff ..... i. 195
Chough ..... i. 298
—— Cornish ..... i. 298
—— alpine ..... i. 302
Cock of the Wood ..... ii. 31
Coot, bald ..... ii. 332
—— common ..... ii. 332
Cormorant, common, or great iii. 240
—— green ..... iii. 250
—— or crested Shag .... iii. 250

Page.
Cornerake ..... vol. ii. 311
Coulterneb ..... iii. 221
Crake, Baillon's ..... ii. 321
—— little ..... ii. 322
—— spotted ..... ii. 318
Crane ..... ii. 131
Creeper, tree ..... i. 344
Crossbill ..... i. 276, iii. 440
—— European white-winged i. 283
—— parrot ..... i. 282
—— two-banded ..... i. 283
Crow, carrion ..... i. 307
—— grey ..... i. 310
—— hooded ..... i. 310
—— red-legged ..... i. 298
Cuckoo ..... i. 356, iii. 442
—— great spotted ..... i. 364
—— yellow-billed American i. 365
Curlew ..... ii. 184
—— jack ..... ii. 196
—— May ..... ii. 196
—— pigmy ..... ii. 284
—— stone ..... ii. 196
Cushat ..... ii. 3
Dabchick ..... iii. 190
Dipper ..... i. 116
Diver, black-throated . iii. 201, 451
—— dun ..... iii. 168
—— great northern ..... iii. 194
—— imber ..... iii. 194
—— lough ..... iii. 159
—— red-throated ..... iii. 203
—— speckled ..... iii. 203
—— white-sided ..... iii. 141
Dotterel ..... ii. 93
—— ringed ..... ii. 96
Dove, collared turtle ..... ii. 18
Duck, American scaup .... iii. 140

Page.
Duck, bimaculated .... vol. iii. 91
—— black ..... iii. 124
—— bridle ..... iii. 134
—— buffel-headed ..... iii. 158
—— burrow ..... iii. 66
—— eider ..... iii. 114
—— ferruginous ..... iii. 65
—— golden-eye ..... iii. 153
—— harlequin ..... iii. 152
—— king ..... iii. 116
—— long-tailed ..... iii. 147
—— nyroca, or white-eyed iii. 134
—— scale ..... iii. 162
—— scaup ..... iii. 134
—— Steller's western .... iii. 117
—— surf ..... iii. 118
—— summer, or wood ... iii. 114
—— tufted ..... iii. 141, 451
—— velvet ..... iii. 122
—— white-faced ..... iii. 134
—— wild ..... iii. 75, 450
Dunbird ..... iii. 127
Dunlin ..... ii. 288
Dunnock ..... i. 156
Eagle, bald ..... i. 29
—— golden ..... i. 3
—— rough-footed ..... i. 13
—— sea ..... i. 14
—— spotted ..... i. 13, iii. 433
—— white-tailed ..... i. 14
Egret ..... ii. 156
Eider, king ..... iii. 116
Falcon, Greenland .. i. 31, iii. 434
—— Gyr ..... i. 31
—— Iceland ..... i. 31
—— Jer ..... i. 31
—— peregrine ..... i. 33
—— red-footed ..... i. 50

Page.

Felt, big, or blue Pigeon vol. i. 130
—— small ..... i. 140
Fern-owl ..... i. 421
Fieldfare ..... i. 130
Flycatcher, pied ..... i. 115
—— spotted ..... i. 113
—— white-collared ..... i. 115
Fowl, common ..... ii. 28
—— Dorking ..... ii. 29
Fulmar ..... iii. 406
Gadwall ..... ii. 86
Gallinule, common ..... ii. 326
—— Martinico ..... ii. 331
—— olivaceous ..... ii. 322
Gannet ..... iii. 254, 451
Garden warbler ..... i. 185
Garganey ..... iii. 91
Goatsucker ..... i. 421
Godwit, black-tailed ..... ii. 222
—— common, or bar-tailed ii. 225
Goldfinch ..... i. 261
Goldspink ..... i. 261
Goosander ..... iii. 168
Goose, bean ..... iii. 33, 449
—— brent ..... iii. 51, 449
—— Canada ..... iii. 24
—— Cape ..... iii. 24
—— cravat ..... iii. 24
—— Egyptian ..... iii. 64
—— grey lag .... iii. 28, 44, 448
—— Guinea ..... iii. 24
—— laughing ..... iii. 42
—— red-breasted ..... iii. 64
—— short-billed, or pink-footed ..... iii. 41
—— solan ..... iii. 254
—— swan ..... iii. 24
—— spur-winged, or Gambo iii. 65

Page.

Goose, white-fronted vol. iii. 42, 449
Goshawk ..... i. 62
Gowk ..... i. 356
Grasshopper warbler ..... i. 179
Grebe, blackchin ..... iii. 190
—— crested ..... iii. 172
—— dusky ..... iii. 186
—— eared ..... iii. 189
—— great-crested ..... iii. 172
—— horned, or Sclavonian iii. 186
—— little ..... iii. 190
—— red-necked ..... iii. 184
—— tippet ..... iii. 172
Greenfinch ..... i. 257
Greenshank ..... ii. 217
Grosbeak ..... i. 259
Grouse, black ..... ii. viii., 34
—— red ..... ii. ix., 47
—— white ..... ii. 45
—— willow ..... ii. 56
—— wood ..... ii. 31
Guillemot, black ..... iii. 214
—— bridled ..... iii. 211
—— Brunnich's ..... iii. 213
—— common ..... iii. 207
—— foolish ..... iii. 207
—— lesser ..... iii. 207
—— ringed ..... iii. 211
—— spotted ..... iii. 214
—— thick-billed ..... iii. 213
Guinea-fowl ..... ii. 27
Gull, black-backed, great .. iii. 385
—— black-backed, lesser . iii. 371
—— black-headed ..... iii. 322
—— Bonapartian ..... iii. 317
—— brown-headed, or masked ..... iii. 334
—— common ..... iii. 348

Page.
Gull, fork-tailed .... vol. iii. 309
—— glaucous ..... iii. 388
—— herring ..... iii. 356
—— Iceland ..... iii. 385
—— ivory ..... iii. 347
—— little ..... iii. 315
—— red-legged ..... iii. 322
—— Ross's (*note*) ..... iii. 314
—— Sabine's ..... iii. 309
—— silvery ..... iii. 356
Harrier, ash-coloured i. 83, 427, ii. viii
—— hen ..... i. 81
—— marsh ..... i. 78, iii. 435
—— Montagu's ..... i. 83, 427
Hawfinch ..... i. 259, iii. 439
Heather-bleater ..... ii. 262
Hedge warbler ..... i. 156
Heron ..... ii. 133
—— great white ..... ii. 157
—— little ..... ii. 159
—— night ..... ii. xii., 173
—— purple ..... ii. 155
—— squacco ..... ii. 158
Hobby ..... i. 49, iii. 434
Hooper ..... iii. 3
Hoopoe ..... i. 353, iii. 442
Ibis, glossy ..... ii. 182
Imber, lesser ..... iii. 201
Jackdaw ..... i. 323
—— red-legged ..... i. 298
Jay ..... i. 339
Kestrel ..... i. 55
—— little ..... i. 60
Kingfisher ..... i. 369
—— belted ..... i. 373
Kite ..... i. 70
Kittiwake ..... iii. 340
Knot ..... iii. 306

Page.
Land-rail ..... vol. ii. 311
Lanner ..... i. 48
Lapwing ..... ii. 110
Lark, common ..... i. 231
—— crested ..... i. 235
—— field ..... i. 227
—— shore ..... i. 236
—— short-toed ..... i. 236
—— sky ..... i. 231
—— wood ..... i. 236
Linnet, common ..... i. 267
—— green ..... i. 257
—— grey ..... i. 267
—— mountain ... i. 272, iii. 440
Magpie ..... i. 328
Mallard ..... i. 75
Martin, house ..... i. 389
—— purple ..... i. 407
—— sand ..... i. 400
May-bird ..... ii. 196
May-fowl ..... ii. 196
Merganser, hooded ..... iii. 161
—— red-breasted ..... iii. 162
Merlin ..... i. 51
Moorhen ..... ii. 326
Morillon ..... iii. 153
Moss-cheeper ..... i. 227
Mountain-finch ..... i. 249
Nightjar ..... i. 421
Noddy ..... iii. 308
Nun, white ..... iii. 159
Nuthatch ..... i. 344
Oriole, golden .... i. 154, iii. 436
Osprey ..... i. 29, iii. 434
Ouzel, ring ..... ii. 149
—— rose-coloured ..... i. 295
—— water ..... i. 116
Owl, barn ..... i. 92

Page.
Owl, eagle ..... vol. i. 85
—— fern ..... i. 421
—— little ..... i. 86
—— long-eared ..... i. 86
—— scops-eared ..... i. 85
—— short-eared ..... i. 88
—— snowy ..... i. 95, iii. 435
—— tawny ..... i. 94
—— white ..... i. 92
Oyster-catcher ..... ii. 125
Parrot, sea ..... iii. 221
Partridge, common ..... ii. 58
—— red-legged ..... ii. 65
Pastor, rose-coloured ..... i. 295
Pea-fowl ..... ii. 27
Peewit ..... ii. 110
Pelican (*note*) ..... iii. 253
Petrel, Bulwer's ..... iii. 418
—— fork-tailed ..... iii. 415
—— storm ..... iii. 418
—— Wilson's ..... iii. 417
Pettychaps, greater ..... i. 135
—— lesser ..... i. 195
Phalarope, grey ..... ii. 336
—— red-necked ..... ii. 343
Pheasant ..... ii. 19
—— golden ..... ii. 24
—— silver ..... ii. 27
Pigeon, passenger .. ii. 18, iii. 443
Pintado ..... ii. 27
Pintail ..... iii. 87
Pipit, meadow ..... i. 225
—— Richard's ..... i. 229
—— rock ..... i. 227
—— tree ..... i. 224
Pirre ..... iii. 281
Plover, golden ..... ii. 83
—— great ..... ii. 82

Page.
Plover, green ..... vol. ii. 110
—— grey ..... ii. xii., 106
—— Kentish .... ii. 104, iii. 445
—— little ringed ..... ii. 102
—— long-legged .. ii. 221, iii. 445
—— Norfolk ..... ii. 82
—— oyster ..... ii. 125
—— ringed ..... ii. 96
Pochard ..... iii. 127
—— red-crested ..... iii. 127
—— red-headed ..... iii. 127
Pratincole, collared ..... ii. 81
Ptarmigan ..... ii. 45
Puffin ..... iii. 221
Purre ..... ii. 288
Quail ..... ii. ix., 66, iii. 444
Rail, Baillon's ..... ii. 321
—— spotted ..... ii. 318
Raven ..... i. 303
Razorbill ..... iii. 235
Red Game ..... ii. 47
Redbreast ..... i. 158
Redpole, greater ..... i. 267
—— lesser ..... i. 270
Redshank ..... ii. 202
—— spotted ..... ii. 200
Redstart ..... i. 169
—— black ..... i. 171
—— blue-throated ..... i. 172
Redwing ..... i. 140
Reed sparrow ..... i. 245
Regulus, fire-crested ..... i. 201
—— gold-crested ..... i. 197
Ring-dove ..... ii. 3
Ringtail ..... i. 81
Robin ..... i. 158
Rock dove ..... ii. 9
Rock-lark ..... i. 227

Page.
Rock-pigeon ..... vol. ii. 9
Roller ..... i. 366, ii. viii.
Rook ..... i. 314
Rotche ..... iii. 218
Ruff ..... ii. 230
Sanderling ..... ii. 121
Sand-lark, fresh-water .... ii. 212
—— of the shore ..... ii. 288
Sandpiper ..... ii. 212
—— ash-coloured ..... ii. 306
—— Bonaparte's ..... ii. 297
—— broad-billed.. ii. 282, iii. 447
—— buff-breasted ..... ii. 302
—— curlew ..... ii. 284
—— dusky ..... ii. 200
—— green ..... ii. 208, iii. 445
—— little ..... ii. 298
—— pectoral ..... ii. 296
—— purple..... ii. 303, iii. 447
—— rock ..... ii. 303
—— Schinz's ..... ii. 297
—— spotted..... ii. 216
—— wood ..... ii. 211
Scaup, American ..... iii. 140
Scoter, black, or common .. iii. 124
—— double ..... iii. 122
—— surf ..... iii. 118
—— velvet ..... iii. 122, 450
Sea-pie ..... ii. 125
Sedge warbler ..... i. 180
Shag ..... iii. 250
—— crested ..... iii. 250
Shearwater, greater ..... iii. 407
—— Manx ..... iii. 409
Shelldrake ..... iii. 66
—— ruddy ..... iii. 65
Shieldrake ..... iii. 66
Shoveller ..... iii. 71
—— blue-winged ..... iii. 71
Page.
Shrike, great grey vol. i. 111, iii. 436
—— red-backed ..... i. 112
Siskin ..... i. 264, iii. 439
Skua ..... iii. 390
—— Buffon's ..... iii. 399
—— long-tailed ..... iii. 399
—— pomarine ..... iii. 392
—— Richardson's ..... iii. 394
Skylark ..... i. 231
Smew ..... iii. 159
Snipe, brown, or grey ..... ii. 234
—— common ..... ii. 262
—— great ..... ii. 257, iii. 447
—— jack ..... ii. 278
—— Sabine's ..... ii. 273
—— solitary ..... ii. 257
Snow-finch ..... i. 241
Sparrow, hedge ..... i. 156
—— house ..... i. 251
—— reed ..... i. 245
—— tree, or mountain .... i. 256
Sparrow-hawk ..... i. 63
Spoonbill ..... ii. 178
—— white ..... ii. 178
Stare ..... i. 284
Starling..... i. 284, iii. 440
—— rock ..... i. 149
—— rose-coloured ..... i. 295
Stint, little ..... ii. 298
—— Temminck's ..... ii. 302
Stock-dove ..... ii. 9
Stone-chat ..... i. 172
Stork, black ..... ii. 178, 181
—— common ..... ii. 175
—— white ..... ii. 175
Swallow, common ..... i. 374
—— sea ..... iii. 281
Swan, Bewick's ..... 13, iii. 448
—— great wild ..... 3, iii. 448

Page.

Swan, Polish ..... vol. iii. 23
—— tame, or mute ..... iii. 21
—— whistling ..... iii. 3
Swift, alpine ..... i. 418
—— common ..... i. 408
—— white-bellied ..... i. 418
Teal ..... iii. 93
—— bimaculated ..... iii. 91
—— summer ..... iii. 91
Tern, arctic ..... iii. 293
—— black ..... iii. 304
—— Caspian ..... iii. 268
—— common ..... iii. 281
—— gull-billed ..... iii. 268
—— little ..... iii. 300
—— roseate ..... iii. 271
—— Ruppell's ..... iii. 266
—— Sandwich ..... iii. 268
—— whiskered ..... iii. 298
—— white-winged black .. iii. 307
Thrush, gold-vented ..... i. 153
—— missel ..... i. 121, iii. 436
—— rose-coloured ..... i. 295
—— song ..... i. 134
—— White's ..... i. 128
Tit, bearded ..... i. 213
—— blue ..... i. 203, 423
—— coal ..... i. 207
—— great ..... i. 201
—— long-tailed ..... i. 209
—— marsh ..... i. 206
Titlark ..... i. 225
Titmouse, crested ..... i. 209
Tomtit ..... i. 203
Tree-creeper ..... i. 344
Turkey ..... ii. 28
Turnstone ..... ii. 117
Turtle-dove ..... ii. 15
—— collared, or African ... ii. 18

Page.

Twite ..... vol. i. 272
Vulture, Egyptian ..... i. 84
—— griffon ..... i. 84
Wagtail, common ..... i. 214
—— grey ..... i. 218
—— pied ..... i. 214
—— Ray's ..... i. 221
—— white ..... i. 218
—— yellow .. i. 218, 221, iii. 437
Waterhen, common ..... ii. 326
Water-rail ..... ii. 322
Waxwing, Bohemian i. 229, iii. 438
Whaap ..... ii. 184
—— May ..... ii. 196
Wheatear ..... i. 176
Whimbrel ..... ii. 196
Whinchat ..... i. 174
Whinyard ..... iii. 74
White-throat ..... i. 186
Wigeon ..... iii. 98, 450
—— American ..... iii. 112
Wind-hover ..... i. 55
Woodchat ..... i. 112
Woodcock ..... i. 235, iii. 445
Woodlark ..... ii. 236
Woodpecker, great black .. i. 343
—— greater spotted ii. 341, iii. 441
—— green ..... i. 343, iii. 441
—— lesser spotted . i. 344, iii. 441
Wood-pigeon ..... ii. 3
Woodquest ..... ii. 3
Wren, common ..... i. 346
—— gold-crested ..... i. 197
—— reed ..... i. 183
—— willow ..... i. 191
—— wood ..... i. 189
Wryneck ..... i. 344
Yellow Ammer ..... i. 243
Yellow Yorlin ..... i. 243

LATIN
ALPHABETICAL INDEX
TO VOLS. I., II., & III.

Page.

Accentor modularis .. vol. i. 156
—— alpinus ..... i. 158, 241
Accipiter nisus ..... i. 63
Alauda alpestris ..... i. 236
—— arborea ..... i. 236
—— arvensis ..... i. 231
—— brachydactyla ..... i. 236
—— cristata ..... i. 235
—— minor ..... i. 224
—— obscura ..... i. 227
—— pratensis ..... i. 225
—— trivialis ..... i. 224
Alca alle ..... iii. 218
—— arctica ..... iii. 221
—— impennis ..... iii. 238
—— pica ..... iii. 235
—— torda ..... iii. 235
Alcedo alcyon ..... i. 373
—— Ispida .... i. 369
Ampelis garrulus ..... i. 229
Anas acuta ..... iii. 87
—— albeola ..... iii. 158
—— albifrons ..... iii. 42
—— Americana ..... iii. 112
—— anser ..... iii. 28
—— bimaculata ..... iii. 91
—— boschas ..... iii. 75
—— Canadensis ..... iii. 24

Page.

Anas casarka ..... vol. iii. 65
—— circia ..... iii. 91
—— clangula ..... iii. 153
—— clypeata ..... iii. 71
—— crecca ..... iii. 93
—— cygnus ..... iii. 3
—— dispar ..... iii. 117
—— erythropus ..... iii. 42
—— ferina ..... iii. 127
—— fuligula ..... iii. 141
—— fusca ..... iii. 122
—— glacialis ..... iii. 147
—— glaucion ..... iii. 153
—— glocitans ..... iii. 91
—— histrionica ..... iii. 152
—— marila ..... iii. 134
—— mollissima ..... iii. 114
—— nigra ..... iii. 124
—— penelope ..... iii. 98
—— perspicillata ..... iii. 118
—— querquedula ..... iii. 91
—— rufina ..... iii. 127
—— segetum ..... iii. 33
—— spectabilis ..... iii. 116
—— strepera ..... iii. 86
—— tadorna ..... iii. 66
Anser Ægyptiacus ..... iii. 64
—— albifrons ..... iii. 42

Page.

Anser Bassanus .... vol. iii. 254
—— bernicla ..... iii. 46, 51
—— brachyrhynchus ..... iii. 41
—— brenta ..... iii. 51
—— Canadensis ..... iii. 24
—— cinereus ..... iii. 28
—— cygnoides ..... ii. 24
—— ferus ..... iii. 28
—— Gambensis ..... iii. 65
—— Guineensis ..... iii. 24
—— leucopsis ..... iii. 46
—— phœnicopus ..... iii. 41
—— ruficollis ..... iii. 64
—— segetum ..... iii. 33
—— torquatus ..... iii. 51
Anthus aquaticus ..... i. 227
—— arboreus ..... i. 224
—— petrosus ..... i. 227
—— pratensis ..... i. 225
—— Richardi ..... i. 229
Aquila chrysaëtos ..... i. 3
—— fulva ..... i. 3
—— nævia ..... i. 13
Ardea alba ..... ii. 157
—— bubulcus ..... ii. 157
—— ciconia ..... ii. 175
—— cinerea ..... ii. 133
—— comata ..... ii. 158
—— garzetta ..... ii. 156
—— grus ..... ii. 131
—— lentiginosa ..... ii. 168
—— minuta ..... ii. 159
—— mokoho ..... ii. 168
—— nycticorax ..... ii. 173
—— purpurea ..... ii. 155
—— ralloides ..... ii. 158
—— russata ..... ii. 157
—— stellaris ..... ii. 160

Page.

Astur palumbarius ..... vol. i. 62
Bombycilla garrula ..... i. 229
Botaurus lentiginosus ..... ii. 168
—— minutus ..... ii. 159
—— stellaris ..... ii. 160
Bubo maximus ..... i. 85
Buteo lagopus ..... i. 76
—— vulgaris ..... i. 72
Calamophilus biarmicus .... i. 213
Calidris arenaria ..... ii. 121
Caprimulgus Europæus .... i. 421
Carbo cormoranus ..... iii. 240
—— cristatus ..... iii. 250
—— pygmæus ..... iii. 253
Carduelis elegans ..... i. 261
—— spinus ..... i. 264
Certhia familiaris ..... i. 344
Charadrius Cantianus ..... ii. 104
—— hiaticula ..... ii. 96
—— himantopus ..... ii. 221
—— minor ..... ii. 102
—— morinellus ..... ii. 93
—— œdicnemus ..... ii. 82
—— pluvialis ..... ii. 83
Ciconia alba ..... ii. 175
—— nigra ..... ii. 178, 181
Cinclus aquaticus ..... i. 116
Circus æruginosus ..... i. 78
—— cyaneus ..... i. 81
—— Montagui ..... i. 428
—— rufus ..... i. 78
Clangula albeola ..... iii. 158
—— histrionica ..... iii. 152
—— vulgaris ..... iii. 153
Coccothraustes chloris ..... i. 257
—— vulgaris ..... i. 259
Coccyzus Americanus ..... i. 365
Columba Œnas ..... ii. 9

Page.

Columba livia ..... vol. ii. 9
—— migratoria ..... ii. 18
—— Palumbus ..... ii. 3
—— risoria ..... ii. 18
—— turtur ..... ii. 15
Colymbus arcticus..... iii. 201
—— auritus ..... iii. 189
—— cornutus ..... iii. 186
—— cristatus ..... iii. 172
—— glacialis..... iii. 194
—— grylle ..... iii. 214
—— minor ..... iii. 190
—— obscurus ..... iii. 186
—— rubricollis ..... iii. 184
—— septentrionalis ..... iii. 203
—— troile..... iii. 207
Coracias garrula .... i. 366, ii. viii.
Corvus Corax ..... i. 303
—— cornix ..... i. 310
—— corone ..... i. 307
—— frugilegus ..... i. 314
—— graculus ..... i. 298
—— monedula ..... i. 323
—— pica ..... i. 328
Coturnix vulgaris ..... ii. ix., 66
Crex Bailloni..... ii. 321
—— porzana ..... ii. 318
—— pratensis ..... ii. 311
—— pusilla ..... ii. 322
Cuculus Americanus ..... i. 365
—— canorus ..... i. 356
—— cinerosus ..... i. 365
—— glandarius ..... i. 364
Curruca atricapilla ..... i. 183
—— cinerea ..... i. 186
—— hortensis..... i. 185
Cygnus Bewickii ..... iii. 13
—— ferus ..... iii. 3

Page.

Cygnus immutabilis .... vol. iii. 23
—— Islandicus..... iii. 13
—— musicus ..... iii. 3
—— olor ..... iii. 21
Cypselus alpinus ..... i. 418
—— apus ..... i. 408
—— melba ..... i. 418
Dendronessa sponsa..... iii. 113
Emberiza cirlus ..... i. 244
—— citrinella ..... i. 243
—— hortulana ..... i. 244
—— miliaria..... i. 241
—— nivalis ..... i. 237
—— Schœniclus..... i. 245
Erythaca rubecula ..... i. 158
Falco æruginosus ..... i. 78
—— æsalon..... i. 51
—— apivorus ..... i. 77
—— buteo ..... i. 72
—— candicans ..... i. 31
—— cineraceus . i. 83, 428, ii. viii.
—— cyaneus ..... i. 81
—— Grœnlandicus ..... i. 31
—— gyrfalco ..... i. 31
—— haliaëtos ..... i. 29
—— Islandicus ..... i. 31
—— lagopus ..... i. 76
—— lanarius (*note*) ..... i. 48
—— maculatus ..... i. 13
—— milvus..... i. 70
—— nævia ..... i. 13
—— nisus ..... i. 63
—— ossifragus ..... i. 14
—— palumbarius..... i. 62
—— peregrinus..... i. 33
—— rufipes..... i. 50
—— rufus ..... i. 78
—— subbuteo ..... i. 49

Page.
Falco tinnunculoides .... vol. i. 60
—— tinnunculus ..... i. 55
—— vespertinus ..... i. 50
Fratercula arctica ..... iii. 221
Fregilus graculus ..... i. 298
Fringilla cannabina ..... i. 267
—— carduelis ..... i. 261
—— chloris ..... i. 257
—— coccothraustes ..... i. 259
—— cœlebs ..... i. 246
—— domestica ..... i. 251
—— flavirostris ..... i. 272
—— linaria ..... i. 270
—— linota ..... i. 267
—— montana ..... i. 256
—— montifringilla ..... i. 249
—— montium ..... i. 272
—— nivalis ..... i. 241
—— spinus ..... i. 264
Fulica atra ..... i. 332
—— chloropus ..... i. 326
Fuligula cristata ..... iii. 141
—— ferina ..... iii. 127
—— leucophthalmos ..... iii. 134
—— marila ..... iii. 134
—— mariloides ..... iii. 140
—— nyroca ..... iii. 134
—— rufina ..... iii. 127
Gallinula Bailloni ..... ii. 321
—— chloropus ..... ii. 326
—— Martinica ..... ii. 331
—— minuta ..... ii. 322
Gallus domesticus ..... ii. 28
Garrulus glandarius ..... i. 339
Glareola pratincola ..... ii. 81
Grus cinerea ..... ii. 131
Hæmatopus ostralegus .... ii. 125
Hæmatornis chrysorhæus .. i. 153

Page.
Haliaëtos albicilla ..... vol. i. 14
—— leucocephalus ..... i. 29
Harelda glacialis ..... iii. 147
Himantopus melanopterus .. ii. 221
Hirundo apus ..... i. 408
—— melba ..... i. 418
—— pratincola ..... ii. 81
—— purpurea ..... i. 407
—— riparia ..... i. 400
—— rustica ..... i. 374
—— urbica ..... i. 389
Ibis falcinellus ..... ii. 182
Lanius collurio ..... i. 112
—— excubitor ..... i. 111
—— rufus ..... i. 112
Larus argentatus ..... iii. 356
—— Bonapartii ..... iii. 317
—— canus ..... iii. 348
—— capistratus ..... iii. 334
—— catarrhactes ..... iii. 390
—— eburneus ..... iii. 347
—— flavipes ..... iii. 371
—— fuscus ..... iii. 371
—— glaucus ..... iii. 388
—— Islandicus ..... iii. 385
—— leucopterus ..... iii. 385
—— marinus ..... iii. 377
—— minutus ..... iii. 315
—— ridibundus ..... iii. 322
—— rissa ..... iii. 340
—— Rossii ..... iii. 314
—— Sabini ..... iii. 309
—— tridactylus ..... iii. 340
Lestris Buffonii ..... iii. 399
—— catarrhactes ..... iii. 390
—— longicaudatus ..... iii. 399
—— parasiticus ..... iii. 399
—— pomarinus ..... iii. 392

Page.

Lestris Richardsonii .. vol. iii. 394
Limosa melanura ..... ii. 222
—— rufa ..... ii. 225
Linaria cannabina ..... i. 267
—— flavirostris ..... i. 272
—— minor ..... i. 270
Loxia bifasciata ..... i. 283
—— chloris ..... i. 257
—— coccothraustes ..... i. 259
—— curvirostra ..... i. 276
—— enucleator ..... i. 275
—— pyrrhula ..... i. 274
—— pyrrhopsittacus ..... i. 282
Machetes pugnax ..... ii. 230
Macroramphus griseus .... ii. 234
Meleagris gallopavo ..... ii. 28
Mergulus melanoleucos ... iii. 218
Mergus albellus ..... iii. 159
—— castor ..... iii. 168
—— cucullatus ..... iii. 161
—— merganser ..... iii. 168
—— serrator ..... iii. 162
Merops Apiaster ..... i. 367
Milvus regalis ..... i. 70
Mormon fratercula ..... iii. 221
Motacilla alba ..... i. 214, 218
—— atricapilla ..... i. 183
—— boarula ..... i. 218
—— flava ..... i. 221
—— modularis ..... i. 156
—— œnanthe ..... i. 176
—— phœnicurus ..... i. 169
—— regulus ..... i. 197
—— rubecula ..... i. 158
—— rubetra ..... i. 174
—— rubicola ..... i. 172
—— sylvia ..... i. 186
—— tithys ..... i. 171

Page.

Motacilla trochilus .... vol. i. 191
—— troglodytes ..... i. 346
—— Yarrellii ..... i. 214
Muscicapa albicollis ..... i. 115
—— atricapilla ..... i. 115
—— grisola ..... i. 115
—— luctuosa ..... i. 115
Neophron percnopterus ..... i. 84
Numenius arquata ..... ii. 184
—— phæopus ..... ii. 196
—— pygmæus ..... ii. 282
Numida meleagris ..... ii. 27
Nycticorax Europæus ..... ii. 173
—— Gardenii ..... ii. xii., 173
Œdicnemus crepitans ..... ii. 82
Oidemia fusca ..... iii. 122
—— nigra ..... iii. 124
—— perspicillata ..... iii. 118
Oriolus galbula ..... i. 154
Otis tarda ..... ii. 77
—— tetrax ..... ii. 77
Otus brachyotus ..... i. 88
—— vulgaris ..... i. 86
Pandion haliaëtos ..... i. 29
Parus ater ..... i. 207
—— biarmicus ..... i. 213
—— cæruleus ..... i. 203, 423
—— caudatus ..... i. 209
—— cristatus ..... i. 209
—— major ..... i. 201
—— palustris ..... i. 206
Passer domesticus ..... i. 251
Pastor roseus ..... i. 295
Pavo cristatus ..... ii. 27
Pelecanus Bassanus ..... iii. 254
—— carbo ..... iii. 240
—— graculus ..... iii. 250
Perdix cinerea ..... ii. 58

Page.
Perdix coturnix .... vol. ii. xi., 66
—— rufa ..... ii. 65
Pernis apivorus..... i. 77
Phalacrocorax carbo..... iii. 240
—— graculus ..... iii. 250
Phalaropus hyperboreus.... ii. 343
—— lobatus ..... ii. 336
Phasianus Colchicus ..... ii. 19
—— nycthemerus ..... ii. 27
—— pictus..... ii. 24
Phœnicura ruticilla..... i. 169
—— Suecica ..... i. 172
—— tithys ..... i. 171
Pica caudata ..... i. 328
Picus major ..... i. 341
—— martius..... i. 343
—— minor ..... i. 344
—— viridis ..... i. 343
Platalea leucorodia ..... ii. 178
Plectrophanes Lapponica ... i. 241
—— nivalis ..... i. 237
Podiceps auritus ..... iii. 189
—— cornutus ..... iii. 186
—— cristatus ..... iii. 172
—— minor ..... iii. 190
—— obscurus ..... iii. 186
—— rubricollis ..... iii. 184
Procellaria glacialis ..... iii. 406
—— Leachii ..... iii. 415
—— pelagica ..... iii. 418
Puffinus anglorum ..... iii. 409
—— major ..... iii. 407
Pyrrhocorax pyrrhocorax ... i. 302
Pyrrhula enucleator ..... i. 275
—— vulgaris ..... i. 274
Rallus aquaticus ..... ii. 322
—— Bailloni ..... ii. 321
—— crex ..... ii. 311
Page.
Rallus porzana ..... vol. ii. 318
Recurvirostra avocetta .... ii. 220
Regulus cristatus ..... i. 197
—— ignicapillus ..... i. 201
Salicaria arundinacea ..... i. 183
—— locustella ..... i. 179
—— phragmitis..... i. 180
Saxicola œnanthe ..... i. 176
—— rubetra ..... i. 174
—— rubicola ..... i. 172
Scolopax arquata ..... ii. 184
—— Brehmi ..... iii. 447
—— calidris ..... ii. 202
—— fusca ..... ii. 200
—— gallinago ..... ii. 262
—— gallinula ..... ii. 278
—— glottis ..... ii. 217
—— grisea ..... ii. 234
—— Lapponica ..... ii. 225
—— limosa ..... ii. 232
—— major ..... ii. 257
—— phæopus ..... ii. 196
—— rusticola ..... ii. 235
—— Sabini ..... ii. 273
—— subarquata ..... ii. 284
Scops Aldrovandi..... i. 85
Sitta Europæa ..... i. 344
Somateria mollissima ..... iii. 114
—— spectabilis ..... iii. 116
—— Stelleri ..... iii. 117
Spathulea clypeata..... iii. 71
Squatarola cinerea .... ii. xii., 106
Stercorarius catarrhactes .. iii. 390
—— longicaudatus ..... iii. 399
—— pomarinus ..... iii. 392
Sterna Anglica ..... iii. 268
—— arctica ..... iii. 293
—— Boysii ..... iii. 268

Page.
Sterna Cantiaca ..... vol. iii. 268
—— Caspia ..... iii. 268
—— Dougallii..... iii. 271
—— fissipes ..... iii. 304
—— hirundo ..... iii. 281
—— hybrida ..... iii. 298
—— leucopareia ..... iii. 298
—— leucoptera ..... iii. 307
—— macrura ..... iii. 293
—— minuta ..... iii. 300
—— nigra ..... iii. 304
—— paradisea ..... iii. 271
—— stolida..... iii. 308
—— velox ..... iii. 266
Strepsilas interpres ..... ii. 117
Strix brachyotus ..... i. 88
—— bubo..... i. 85
—— flammea ..... i. 92
—— nyctea ..... i. 95
—— otus ..... i. 86
—— passerina..... i. 86
—— scops ..... i. 85
—— stridula..... i. 94
Sturnus cinclus ..... i. 116
—— vulgaris ..... i. 284
Sula alba ..... iii. 254
—— Bassana ..... iii. 254
Surnia nyctea..... ..... i. 95
Sylvia arundinacea ..... i. 183
—— atricapilla ..... i. 183
—— cinerea ..... i. 186
—— hippolais ..... i. 195
—— hortensis ..... i. 185
—— locustella ..... i. 179
—— œnanthe ..... i. 176
—— phœnicurus ..... i. 169
—— phragmitis ..... i. 180
—— regulus ..... i. 197

Page.
Sylvia rubecula ..... vol. i. 158
—— rubetra ..... i. 174
—— rubicola..... i. 172
—— rufa ..... i. 195
—— salicaria..... i. 180
—— sibilatrix ..... i. 189
—— sylvicola ..... i. 189
—— tithys ..... i. 171
—— trochilus ..... i. 191
—— troglodytes ... . i. 346
Syrnium aluco ..... i. 94
—— stridula..... i. 94
Tadorna rutila ..... iii. 65
—— vulpanser ..... iii. 66
Tantalus falcinellus..... ii. 182
Tetrao coturnix ..... ii. 66
—— lagopus ..... ii. 45
—— perdix ..... ii. 58
—— saliceti ..... ii. 56
—— Scoticus ..... ii. ix., 47
—— tetrix..... ii. viii., 34
—— urogallus ..... ii. 31
Thalassidroma Bulweri.... iii. 418
—— Leachii ..... iii. 415
—— pelagica ..... iii. 418
—— Wilsoni ..... iii. 417
Totanus calidris..... ii. 202
—— fuscus ..... ii. 200
—— glareola ..... ii. 211
—— glottis ..... ii. 217
—— hypoleucos..... ii. 212
—— macularius ..... ii. 216
—— ochropus ..... ii. 208
Tringa alpina ..... ii. 288
—— arenaria ..... ii. 121
—— Bonapartei..... ii. 297
—— canutus ..... ii. 306
—— cinclus ..... ii. 288

Page.

Tringa cinerea ..... vol. ii. 306
—— glareola ..... ii. 211
—— hypoleucos ..... ii. 212
—— interpres ..... ii. 117
—— lobata ..... ii. 336
—— maritima ..... ii. 303
—— minuta ..... ii. 298
—— ochropus ..... ii. 208
—— pectoralis ..... ii. 296
—— platyrhyncha ..... ii. 282
—— puguax ..... ii. 230
—— rufescens ..... ii. 302
—— Schinzii ..... ii. 297
—— squatarola ..... ii. 106
—— subarquata ..... ii. 284
—— Temminckii ..... ii. 302
—— vanellus ..... ii. 110
—— variabilis ..... ii. 288
Troglodytes Europæus .... i. 346
Turdus aurigaster ..... i. 153

Page.

Turdus chrysorhæus ... vol. i. 153
—— iliacus ..... i. 140
—— merula ..... i. 142
—— musicus ..... i. 134
—— pilaris ..... i. 130
—— roseus ..... i. 295
—— torquatus ..... i. 149
—— viscivorus ..... i. 121
—— Whitei ..... i. 128
Upupa Epops ..... i. 353
Uria alle ..... iii. 218
—— Brünnichii ..... iii. 213
—— grylle ..... iii. 214
—— lacrymans ..... iii. 211
—— leucophthalmos ..... iii. 211
—— minor ..... iii. 207
—— troile ..... iii. 207
Vanellus cristatus ..... ii. 110
Vultur fulvus ..... i. 84
Yunx torquilla ..... i. 344

ERRATA.

VOL. I.

Page 31, 17th line from top, and again 4th line from bottom of page, omit "v. p."
,, 53, Next line but one from bottom of page, instead of *shere*, read *shore*.
,, 112, Heading of page, instead of *Strigidæ*, read *Laniadæ*.
,, 180, Instead of matter in lines 12 and 13 from top, read The intelligent gamekeeper at Tollymore Park, county of Down, assured me that in the summer of 1838 he had heard its note.
,, 256, 12th line from bottom of page, instead of *domeiile*, read *domicile*.
,, 258, 6th line from top of page, instead of *too*, read *two*.
,, 271, 6th line from bottom of page, instead of *contradiction*, read *contradistinction*.
,, 272, 5th line from top of page, instead of During *the*, read During *that*.
,, 282, 2nd line from top of page, instead of *princial*, read *principal*.
,, 344, 8th line from bottom of page, omit sentence beginning *To the*.
,, 385, 16th line from top of page, instead of *observation*, read *obscuration*.
,, 425, 2nd line from top of page, add, after *visitants*, "in the preceding list."

VOL. II.

Page 11, Last line but one, instead of *vol. iii.*, read *vol. i.*
,, 61, 3rd line from top of page, instead of *north-west*, read *north-east*.
,, 62, 3rd line from bottom of page, instead of *course*, read *coarse*.
,, 66, 3rd line from top of page, instead of *Gildear*, read *Gildea*.
,, 95, Mr. Baikie, one of the authors of the 'Historia Naturalis Orcadensis,' corrects an error here copied from that work with reference to the Dotterel being a winter visitant to Orkney;—he states, that it is instead a summer visitant.
,, 144, Last line, instead of *heron*, read *heronry*.
,, 187, 2nd line from top of page, insert after *herons*, "became."
,, 307, 5th line from bottom of page, instead of *later*, read *latter*.

In addition to the foregoing, other errors have been observed; but as they do not affect the meaning of the author, it is considered unnecessary to correct them.

Reeve and Nichols, Printers, Heathcock-court, Strand.

UNIVERSITY OF ILLINOIS-URBANA
591.9415T37N C002 V003
THE NATURAL HISTORY OF IRELAND$LOND
3 0112 010026133